Tallinn University
Institute of Informatics

Online learning in higher education

The case study of the "Designing Technology Enhanced learning" course

Master Thesis

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The Author's Declaration

I hereby declare that, apart from work whose authors are clearly acknowledged, this document is the result of my own and original work.

This thesis has not and is not being submitted for any other comparable academic award.

The thesis has been supervised by PhD David Lamas

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1. Introduction

Learning is a lifelong process, which does not end with the school graduation. Quite often, learning is interpreted narrowly as the process of acquiring new knowledge in the academic context, but actually learning is taking place every day through gaining new experiences and making sense of them. Paavola and Hakkarainen (2005) have proposed three different metaphors to make distinction between alternative conceptualisations of learning: learning as acquisition, learning as participation and learning as knowledge creation. While some see learning as merely the acquisition of knowledge (believing that knowledge can belong to an individual, it can be transferred), the others define learning as participation in a community of practice (believing that learning happens inside a community, learner infiltrates into the local culture of the community by practicing their language, tools and rituals). The third, emerging approach understands learning as knowledge creation, which results with shareable artefacts called knowledge objects. New digital tools – social networks, blogs, Twitter, Youtube etc - seem to support both learning by participating and learning as knowledge creation.

In parallel with the development of technology, also the educational field is in constant evolution. Electronic communication has been influencing teaching and learning already for more than a decade (Garrison & Anderson, 2003). Computers are changing the everyday practices in every field and education is not an exception. Computers, Internet and other digital tools provide convenience, immediacy and time efficiency in our daily routine that is hard to resist. In 2000, about 56% of adults were active in the Internet, by 2009 the percentage of them had risen to 74% (Lenhart, Purcell, Smith & Zickuhr, 2010), 75% of them had joined social networks, read blogs etc (Kaplan & Haenlein, 2009). Today, the keyword is digitalization – the relevant data is put into digital form, which at first moment we see as positive factor. The digital environment is characterized by speed and immediacy i.e. you have the access to a very big amount of information with just a click of a mouse through variety of communication channels and social networks (Conole, 2008). Widespread use of digital tools in formal education has gave birth to phenomenon called "e-learning" – *the use of any kind of Internet or communication service or device that supports ... a learning activity* (Conole, Laat, Dillon & Darby, 2008).

e-Learning is being promoted more and more, but still is not that well adopted in all countries and educational institutions.

According to Conole (2008), good practices of e-learning call students to reflect, to build cumulatively on existing knowledge and develop individual understanding over time. One might ask, are today's students ready for this? Would they adapt the more Internet based forms of studying if it was an option? What is their personal opinion towards using new technological means in their studies? Another issue is the relevance of existing digital tools for new ways of learning – learning as participation in community and learning as knowledge creation. The pedagogy can be learner-centered, but the systems aren't (Conole, 2008). We cannot forget that educational systems are slow to change as opposed to technology, which is developing rapidly. It is not enough if students prefer to use newest technologies in their studies; if the teachers see in the technology the supportive and attractive components to make learning interesting for the students; if institutions (schools, universities) are ready to accept technology as the supportive manner in learning – the whole educational system need to accept the changes (Garrison & Anderson, 2003).

Yet there is one more question that arises in this context - can social media be counted in as serious resource for supporting learning activities? So far, if you ask from people what in their mind is social media, it is mostly associated with Facebook or communicating with friends etc. – in other words with entertainment (Lenhart et al., 2010). Too often people cannot see learning-related affordances of entertaining social media tools and therefore, they miss the possibility of using them for learning purposes. Not to mention the opportunity of using blogs to reflect studies through constant updated posts. On the other hand, using blogs and other social media tools in teaching and learning process raises some new issues, which were not present in traditional, closed learning management systems (e.g. Moodle, IVA[1]): complete openness of learning process, reduced privacy, challenges regarding intellectual property rights when remixing digital learning resources etc.

[1] *IVA - http://iva.tlu.ee/IVA/IVA/*

This master thesis tries to explore the students' and facilitators' attitudes toward openness, sharing and privacy issues in social media based online learning environments. The main research questions are:

- What are the main constraints regarding course design and facilitation on a cross-cultural online course taught in an online learning environment built with social media tools?
- What are the main challenges with regard to openness, sharing and privacy in such learning environment, perceived by students?
- What are the factors that make the students participate or not in online course?

The thesis consist of four parts that are divided accordingly:

The first chapter gives an overview of the theoretical background for the technology enhanced learning by defining most relevant concepts of e-learning and e-learning2.0; then introducing the typical user of social media from the theories revealed; and finalizing with what kind of social media tools have been used so far.

The second chapter focuses on the usage patterns of social media in educational field by revealing three different approaches for finding – firstly providing theoretical materials about the pros and cons of usage in general; then showing the findings of first person account and finally describing the results of complementary online survey.

The third chapter deals with the issue of what is the role of a facilitator in e-course, from the perspective of cognitive apprenticeship theory.

The last chapter introduces a case study of conducting an online course for students from four different European universities. The study was conducted on a group of international students, who participated in a pilot course for international project "CoCreat". The data was collected by an online survey, which was then analyzed and summaries together with the results of an ethnographic study. The chapter also provides the reader with the facilitator's observations on the course.

The thesis will end with analyzing if the questions and problems written above found their answers and concludes if online learning can be used as alternative to lectures held in classroom.

2 E-learning: the theoretical background

For the introductory purposes, the theoretical part of the thesis concentrates on explaining different notions. Notions, which are tightly related to the topic and therefore, to the context, within they are used, need to be clarified for better understanding. As online learning is already one part on higher education (one could say the proportion of it is increasing by simply observing the teaching trends of today), there needs to be something in it both for the students and lecturers. This part will first explain the essence of e-learning and its development into e-learning 2.0; moving on with describing the user, who'd most likely benefit from e-learning and finishing with an overview of the opportunities as well as barriers which hinder widespread adoption of e-learning.

2.1 Defining e-Learning

The concept of learning/teaching started to change together with the development of technology. If the traditional approach was to held lectures physically in classroom, then with the changes it started to move outside from physical building (Zhang, Zhao, Zhou, & Nunamaker Jr., 2004). More over, the remarkable changes on how learning was conducted, started with the increased accessibility to the Internet, which is the core for e-learning (Garrison & Anderson, 2003) and enables delivering information and knowledge at low cost and in real-time (Zhang et al., 2004). In the sense of having Internet as one instrument of conducting online learning, then three very important characteristic of it are revealed (Rettie, 2002):

- *Space/time compression* – instant communication despite the physical location;
- *No sense of place* – anonymity enabling multiple roles;
- *Blurred boundaries and transformed communities* – the formulation of virtual communities

If traditional learning was more teacher-centered and sequential, then e-learning introduced to the educational field the learner-centered and self-paced learning environment approach. Therefore, e-learning can be defined as a process of networked, on line learning in formal context with the use of range of multimedia

technologies concentrating on asynchronous and collaborative learning (Garrison & Anderson, 2003) or to put it shortly it is technology-based learning with electronically delivered materials (Zhang et al., 2004). Simple example of an e-learning material was PowerPoint slideshow or scanned materials uploaded into certain website. This meant, that the learner had more freedom to choose and decide. Although, e-learning can be an alternative form for traditional learning, it has its negative and positive sides, which are;

Advantages	**Disadvantages**
Learner centered	Lack of immediate feedback
Flexible in time and location	Higher preparatory time for teacher
Cost-effective	Not suitable for everybody
Cross-cultural potential	Might be frustrating and confusing
Unlimeted access to knowledge	
Reusage and charing of knowledge	

Figure 1: Advantages and disadvantages of e-learning

However, it cannot be stated that e-learning will replace the traditional classrooms nor it is suitable for every student (Zhang et al., 2004). E-learning was and still is one way of uniting the learning activity with daily routine. But the concept of learning has also changed due to the increasing usage of social media tools – e-learning has transformed into e-learning 2.0.

2.2 Towards e-Learning 2.0

At first e-learning concentrated mainly on using technology as supportive factor in the learning process. The concept however, evolved into e-learning 2.0, when the social software[2] as a new component was taken into use in the educational field. This meant that the content was not only produced by the teachers, but also students were able to contribute to the creation of course content in a bottom-up way (Wever De, Mechant, Veevaete & Hauttekeete, 2007). That lead to a situation, where students had even more control over their studies. The term social software, however is probably better

[2] *Social software – enabling communication through digital technologies where people connect, collaborate, manage content and form online networks in a social and bottom-up fashion (Wever De et al., 2007)*

know as social media[3]. Today, if to ask from people with what do the term "social media" associates for them, the most common answer would probably be entertainment or communication/socializing. The most popular application of it is Facebook (Lenhart et al., 2010) - it is like a mirror of social media. There are two other terms that are sometimes used as synonyms for social media, but which rather complement each other. Those are Web2.0[4] where blogs, wikis, streaming, RSS-feeds and collaboration are the key issues and User Generated Content[5]. The applications of social media can be divided according their presence in media and the self-presentation/ self-disclosure factor. An illustrative figure from them can be seen below:

		Social presence/ Media richness		
		Low	Medium	High
Self-presentation/ Self-disclosure	High	Blogs	Social networking sites (e.g., Facebook)	Virtual social worlds (e.g., Second Life)
	Low	Collaborative projects (e.g., Wikipedia)	Content communities (e.g., YouTube)	Virtual game worlds (e.g., World of Warcraft)

Figure 2: Division of social media apprlications (Kaplan & Haenlein, 2009)

So all in all, e-learning 2.0 is about user-generated and shared digital content or knowledge objects. How people benefit from it during their studies is a mixture of their independent and personal choice versus the requirements of the course(s). Originating from this, who are the users for e-learning 2.0. Can it be any students or should their be some requirements filled in advance?

2.3 Digital divide

3 social media - is "a group of Internet-based applications that build on the ideological and technological foundation of Web 2.0 and that allow the creation and exchange of User Generated Content" (Kaplan & Haenlein, 2009)

4 WEB2.0 - the new way to utilize world wide web which is a platform whereby content and applications are no longer created and published by individuals, but instead are continuously modified by all users in a participatory and collaborative way) (O'Reilly, 2005)

5 User Generated Content - the ways, in which people make use of SOCIAL MEDIA(Kaplan & Haenlein 2009)

After defining e-learning and e-learning2.0, it is time to look closer to whom these affordances have been addressed to. One thing is sure that not every person is able and/or wants to use technology on daily basis. Also the Internet along with ICT-tools is not equally available and/or affordable to everyone. Moving on, the user behaviour can be influenced by many different personal, cultural and environmental facts. For instance where and when was the person born; who and in what position in the society were his/her parents and other relatives; what are the cultural values and social norms of that particular society etc. That has caused another modern phenomenon of digital division – an unequal access to ICT-tools and the Internet, which leads into low-frequent or not using E-LEARNING 2.0at all (Selwyn, 2010). Below you can see a table explaining the different steps of digital divide:

Stages of digital divide		
1	Formal /theoretical access to ICT	The access to E-LEARNING 2.0tools is possible via home, community or university settings only in theory
2	Effective access to ICT	The access to E-LEARNING 2.0tools is possible via home, community or university setting depends on the wish and ability of the person
3	Using ICT	The person uses E-LEARNING 2.0tools in what ever way he/she wants/needs
4	Engagement with ICT	The usage is "meaningful" with a certain purpose, the person has control over the tools and content
5	Consequences	The person is actively participating in the society using E-LEARNING 2.0tools

Figure 3: Stages of digital divide (Selwyn, 2010)

So who are then the main users of Social media-tools? Selwyn (2010) defines them as relatively well-educated, middle class and young individuals and university students. If taken into consideration, that all characteristics do not have to apply simultaneously, it can be anyone of us. These are the people who have grown up with new digital technologies and use WEB2.0 applications without difficulties (Kennedy et al., 2007). A widely known term used for them is "The Net Generation" - people born after 1980-s (Conole et al*.,* 2008) and raising up in the Internet culture (Rettie, 2002). The Net Generation is people who (Conole et al., 2008):

- Process information and communication differently than the previous generations;
- Are comfortable with technology, their way of studying is task-oriented and multi-tasking;

- Use multiple communication channels to access information and communicate with friends and tutors.

As you can see Net Generation are now at the age of 35 and the youngest are only in their teenage (Kennedy et al., 2007). They have no problems using social media, but instead some of them belong into rather negative group of "Google generation" – students, who have too easy access to new technologies and therefore undergraduates have become very dependent on digital resources. Instead of using E-LEARNING 2.0for deep learning, they prefer to "googling their way" out from courses (Selwyn, 2010).

However, being acquainted with the possibilities of ICT, the students of Net Generation at various stages in their courses develop particular learning strategies and facilitation skills to support their online learning. This happens due to the fact that they are being encouraged to involve themselves in coordinating and regulating personal and shared learning activities[6]. They are even actively taking part in co-designing their e-learning environments. (Conole et al., 2008). This all refers to the fact that today students do not need support in their activities in the form of describing them each step they need to take, but teachers need to support their activities by guiding them to the more relevant study materials. If the students are independent enough, there should also be evidence on the tools they've used already. The next chapter will focus on this issue.

2.4 Impact of new technology on teaching and learning

Technology plays central role in our everyday activities, it is at the heart of all aspects of students' lives (Conole et al., 2008). Sometimes we use the features of it even without acknowledgement, since they blend into our lives smoothly and making us benefit rather than getting negative emotions. In order to gain maximum efficiency from it, we need to first understand what we are dealing with. Therefore, a clear picture of the functions, as well as impacts, need to be drawn.

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6 The different learning style, that students tend to have now are a very important indicator for the conductor and need to be taken into consideration for offering high quality education (Zapalska & Brozik, 2006)

2.4.1 The change in learning habits

As said by Conole and Dyke (2004) there has been a rapid growth in online learning environments and associated tools to support learning and research. In other words, to make learning more interesting and attractive for the target group (which mostly consist of younger generation, who already use social media daily), it is no longer enough to have only theoretical lectures (Toming, 2011). If the students have the interest and skills, they might prefer more looking for digital information such as articles, images, podcasts etc. (Conole et al., 2008). It is important to have diversity in the learning process in order not to loose the attention of students during the lecture, therefore the teacher has the responsibility to guide the student through the masses of information and to help finding the most relevant pieces of it (Garrison & Anderson, 2003). The fact of too much free information lying everywhere causes distrust towards online learning as the teacher cannot be sure which parts of the students' work are their own and which are taken from the Internet without proper references. Therefore, the skeptics are quite hesitating when it comes to implementing Social media tools into learning and teaching process. At the same time, the learner has the responsibility to decide what is to take and what to leave. We can say the focus has been sifted from "searching" to "selecting" (Conole & Dyke, 2004).

2.4.2 Advantages of e-learning

A better understanding of the nature and properties of technology will ultimately lead to more systematic use of technology in the learning and teaching context (Conole & Dyke, 2004) – in other words, we do not acknowledge the full potential of it and how it can support educational field. On 2008, when she published one of her articles about WEB 2.0 tools in education, Conole et al., (2008) adds after conducting a wide range survey, there is a degree of commonality in terms of hardware and software used, but the way and frequency of the usage differed. It was clearly seen, that students with personally owned technologies (computers, mobile devices etc.) were

more likely to use technology for studying purposes. However, to start with drawing the map of the impact of technology in education, let us bring out the two helpful facts of it (Conole & Dyke, 2004):

- The ubiquitous factor of technology – a tool for working, communicating, supporting learning (better access to study sources);
- Software tools, hardware systems, and online environments supporting from research publication management to online assessment and monitoring

Yet, the same time it is also complicated to convince different cultures to use technology together with social media. What is new and unknown is often described as something bad. The negative aspects of e-learning are addressed in the next chapter. In the educational field, we are stuck in history and traditions, which leave the technologies to carry the role of "disruptive factor" (Conole et al., 2008). For learning purposes studies have shown and also encouraging authentic virtual learning and collaboration to be more difficult than thought at the first moment (Conole & Dyke, 2004). Yet, one cannot forget the fact that *"Web 2.0 and e-learning 2.0"* have become synonymous and while emerging new forms of mobile, Internet and social software technologies enabling distributed collaboration, we are reaching a turning point in the way of how technology is used for learning (Conole et al., 2008). To be clear on both sides, there are also some negative points of e-learning 2.0, which are now introduced.

2.4.3 The negative aspects of e-learning 2.0

What could be the reasons why adapting new ways of learning is too difficult? Seems like the activities we do and tools we use for daily communication and entertainment purposes somehow do not qualify in the educational context. Some interesting reasons were brought out referring to this problem (Conole & Dyke, 2004):

- Information overload, coupled with confusion of where to look, potential loss of identity. Also quality assurance, lack of reflection and the need for more critical evaluation of the information;
- The fostered surface approach of data, no time or resources for deeper familiarization of the information;

- Little is understood about what technology can afford to its user and how it can be beneficially used in the learning and teaching context;
- Unintended consequences of the changes as potential losses of jobs, fear on increased surveillance, ethical questions etc;
- Practitioners are still unclear about how to use technology appropriately in the educational context since its applications are often based on common sense rather than pedagogical theory;
- Technology is changing rapidly, which causes the intrinsic level of fragility in digital technologies and networks;
- Plagiarism, increasing commercial exploitation and unwelcome mail;
- Risk, fragility and uncertainty – there are incidents, where the technologies have not been used in the ways originally intended. As the systems are complex, they are vulnerable to abuses, disruption from viruses and spam;
- Monopolization – the convergence and divergence of different technologies is very important, leading towards the importance of interoperability;
- Surveillance – the means by which the ones with power can extend their gaze and secure greater knowledge and control over others. For example, the teacher is able to use monitoring tools or use blind copying function in emails.
- The reliability issue is not only the view of teachers, but also students can be skeptic (Conole et al., 2008).

I would also like to add the most obvious facts of people being concerned about the issue of privacy, what information is revealed about them and where. Conole et al., (2008) adds some more factors like while using technology in the educational context, students focus primarily at the level of course evaluation criteria rather than how to actually use and experience technology. Garrison and Anderson (2003) saw this problem already five year before, when stating that if the requirement for passing an online course were too strict, then the students will focus on passing the course and not on learning part. In other words, the students had not enough knowledge or even couldn't imagine before hand how to use technology in the learning activities.

2.4.4 Advantages of e-learning2.0

We are still struggling with the issue of why should we adapt the use of technology into learning and teaching activity. If there are still theoreticians against it, is it reasonable to waist energy and time to prove something to be useful if more likely it will not be adapted by the skeptics? Conole and Dyke (2004) brought out affordances[7] of ICT, which will now be introduced:

- First, accessibility – online and easy access to vast amount of information through different mechanisms like gateways, portals, websites, knowledge networks and shared communities of users;
- Second, speed of change – the immediate access to rapidly changing information is the most important feature of new technologies, which enables unprecedented speed of access to materials as they change;
- Third, diversity – learning is not happening in one place, but you can inform learning via overseas web sites, access to subject experts or use simulations to replicate complex behavior;
- Fourth, communication and collaboration – because the wide use of technology, new means of communication and sharing information have occurred (emailing lists, forums, chat rooms). At the same time, physical appearance is no longer mandatory and new forms of groups have developed – communities of practice;
- Fifth, reflection – mainly the use of asynchronous technologies, which decrease the importance of simultaneous appearance of members of one group. There for, building archived materials available from earlier discussions becomes easier;
- Sixth, multimodal and non-linear – learning has been promoted as a linear activity, where in fact new knowledge is acquired through non-linear approach (Phelps, 2003). Non-linear learning on the contrary, encourages learning in the "natural" way by looking information for that topic which

7 Affordance - the perceived and actual properties of thing, primarily those functional properties that determine just how the thing could possibly be used (Conole & Dyke, 2004).

has attracted the interest at the very specific point. Multi-modality supports this approach;

- Seventh, immediacy – the speed of information exchange has increased enormously leading into consequential intensification of working patterns of the request to immediate responses.

To conclude the paragraph of theoretical background it needs to be stressed one more time that e-learning 2.0 in a new and promising way of innovating teaching and learning process through the use of social media tools and other new technologies. The potential users have to overcome from their prejudice of the entertaining side of social media and concentrate on its wide range of possibilities. Although the majority of the users of social media are young people, mostly belonging to the Net Generation, it is still possible to gain value from e-learning2.0 after crossing the digital divide. Learning habits are changing because of the growing awareness of affordances of social media. Finally, social media provide time efficient approach to a self-directed learner.

3 Usage Patterns

The issue of what students prefer to use can be seen from different angles. Firstly, there are surveys conducted on the topic, which will be introduced. Secondly, the author of this thesis participated in many e-courses during her master studies and will describe more detailed her personal experience and observations. Lastly, to get a wider view of the preferences in general, an online questionnaire among students from different countries was carried out. The following chapter will now introduce more thoroughly these three aspects.

3.1 What tools are the students using generally and what have they used for learning purposes?

According to survey by Lenhart et al., (2010), the most popular social media tools among youngsters in the age between 18-29 in the United States are still concerning socializing and entertainment. Blogging and tweeting have lost their importance. However, the technical capacities are quite high where 93% of the students admit going online daily. Another survey by Conole et al., (2008) revealed there are tools, which students consider to be useful in their studies. The survey was conducted four year ago, which revealed that students tend to use e-learning 2.0 tools for four main categories, which are:

- Information seeking and handling – Google and Wikiversity were the most commonly used sources;
- Communication – with each other they used mobile phones, MSN messenger, instant messaging (for international communication), emailing for contacting the teacher, forum and blogs for reflection;
- Assignment preparation – using Microsoft Office (Word, Excel and PowerPoint);
- Integrated learning – to attract attention, the virtual learning environment (VLE) has to be well designed, relevant to students' needs and appropriately embedded into the culture of to course. VLE is moving towards becoming the central resource for the students.

This division, however, does not give a clear picture of the specific tools used. As described before, online tools have changed the ways for learning. More over, the new ways of using these social networking tools result in a fundamental shift in the way students learn, consume and produce new artefacts. (Conole et al., 2008) At the same time it is not clear if, how and in what amount do students use social media in the learning context. Further more, conducted studies so far show that technologies have fundamental impact on the way how students learn, but more thorough research need to be done to understand the nuances of how students use technologies to support their learning (Conole et al., 2008). Based on the survey by Conole we can claim the interest of using social media more to support learning activity, is there. One example to prove this claim is the author's personal experience during her master program.

3.2 A first person account

The first example of participating in online courses is an ethnographic narrative study (Baszanger & Dodier, 2004). The author of the thesis describes the master's program of IMKE, which aims at introducing different solutions for more convenient use of social media. The program is introduced from the flexibility point of view as well as the structure of the courses will be shown.

3.2.1 IMKE master's program

As a student in the Interactive Media and Knowledge Environments Master Program (IMKE) at Tallinn University, which combines intensive week-long study sessions with flexible independent study, allowing the students to combine their studies with full-time work. Emphasis is on interactivity – in the possibility of getting information online from long distance and communicating via computers, laptops, smart phones etc (Jensen, 1998). Various course descriptions of the curriculum revealed the high usage of different communication tools and social media forms for conducting the activities. Majority of the courses have blogs or Wiki pages instead of paper-based materials. Also students are required to keep personal blog for their studies. Some of the courses have face-to-face meetings, whereas others put a lot of effort into using

different communication tools (Skype, FlashMeeting) and study environments (Elgg, EduFeedr).

During the two years of master studies, the author participated in 26 different courses and made personal observation on how the courses were structured. It revealed, that two of them were 100% conducted online; fifteen had some face-to-face meetings, but at the same time the facilitators held course blogs or Wiki page and/or used other kind of e-learning 2.0 tools; and nine teachers preferred to have only auditory lectures. In the auditory courses, which did not require any specific ways for contacting and socializing with fellow students, the students chose independently social media tools to support either their teamwork or filling their home tasks. For example, some courses had the following structure (see the complete names of the courses and table of characteristics in List of Tables, Table 1) – NIE (study materials were uploaded in course blog, home works were presented in students' personal blog, meetings were conducted via FlashMeeting and every participant could observe his/her personal development in EduFeedr); ELinNM (study materials were uploaded in Wikiversity and discussions were carried both in course forum and via weekly Skype meeting, home works were presented in students' personal blog); ITFNM (had weekly face-to-face meetings and any reading materials as well as homework were shared in Dropbox or published in the course blog); MP (course had two face-to-face meetings, all relevant study materials and discussions were shared in an environment called iCampus (an Elgg-based environment), also two meeting in the middle of the course were organized using FlashMeeting). This kind of arrangement brought out one big advantage of using e-learning 2.0 tools– flexibility. Students have busy lives and important is no longer how much you are able to do, but how much different activities in a short time you are able to do.

3.2.2 Flexibility enabled by the IMKE program

Being a full time working student, it is also vital to have the access to course materials or do assignments when there is spare time and therefore this approach helps to manage time more efficiently. The flexibility in the sense of choosing yourself the time when to do the assignments, is characteristic for online learning. The importance of flexibility was revealed also in the case study of Conole et al., (2008) where the

students, who had to work, had children, lived from a distance or had high workload, appreciated the access to an integrated set of online-related information and resources. The author had to create a study blog at the beginning of her studies, which remained the central body of the studies throughout the two school years. The courses also introduced different tools available, usually suggested by the facilitator to be used during the specific course, but some remained helpful after the course finished. One example of the tools introduced is mapping, which is now used to describe the division of the courses for the author (for each course, initials were chosen not the whole name was spelled out). The courses were divided into three groups:

- Courses conducted 100% online;
- Courses, that used different technology and social media means;
- Courses, where materials were produced only on paper and/or PowerPoint and additional materials in the web were not provided.

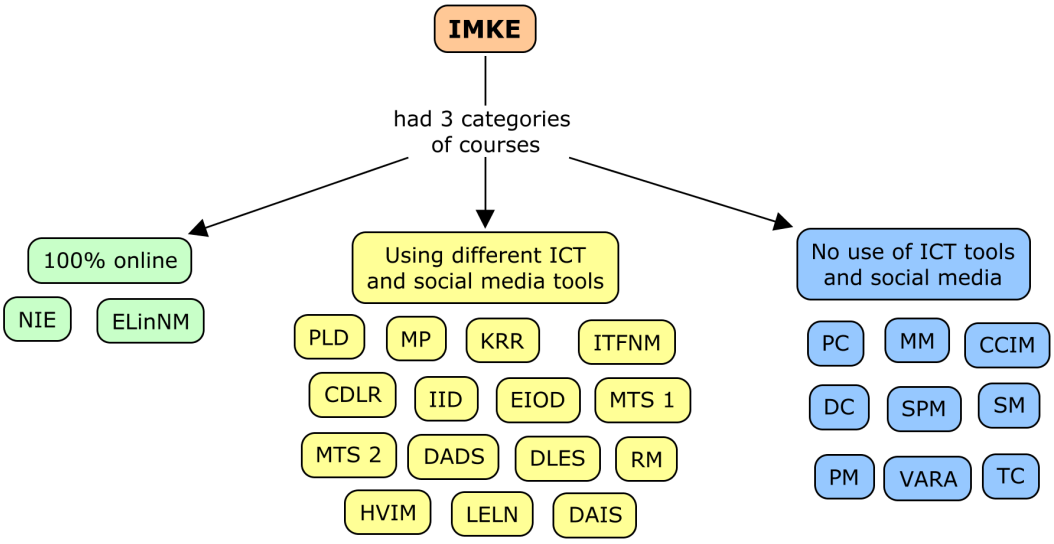

Figure 4: Division of the courses taken by the author by the way they were conducted

Out of 26 courses, 17 were one way or the other representing the e-learning 2.0 characteristics and less than half had the approach of e-learning by having paper based materials or PowerPoint slides as the only ways of presenting study materials. Even in those cases students used Google docs or Skype for collaborative working on their own initiative.

3.2.3 Personal reflection of the program

The general impression of the study form of IMKE program is rather positive. As said before, it allowed flexibility because of the structures of the courses. From my perspective, the courses, that left the most positive impression, usually provided only the frame for the course, leaving the content to be created by the students i.e. the students had to be more independent and aware of their wishes, in return more freedom was provided to them. For example the courses, which had blog as the main body, provided all information (administrative issues, course related assignments, feedback of the conducted tasks, study materials) online and therefore were accessible whenever the students needed. The other positive factor was the introduction of various possibilities in the form of making the students explore independently or use in their assignments different applications and/or learning environments. For example, one course used IVA as its central body, other iCampus.

The interactive communication via Skype and/or FlashMeeting provided the students with higher range of flexibility for participating in course meetings. It is known, that uniting your school activities with personal and work routine, is quite challenging, especially if you need to participate in face-to-face meetings. Interactive communication lost the restriction of physical appearance and most probably increased the general participation level. The need for physical meetings was also small for courses using course blogs, as there were contact session at the beginning and end of the course, but general communication was done via commenting each other's assignments and posting feedbacks.

If there was something to be changed, then I would suggest limiting the variation of different tools in the sense of them being compulsory. Not all students are impressionable when it comes to using new tools/environments, especially if the student does not belong into the Net Generation. When the students have chosen IMKE program, they need to take into account the wide range of possibilities they'll be introduced to, but the fact that master level students are older and more conscious, makes them more standoffish toward enforced solutions. There should be kept the possibility that student can choose his/her own tool together with the agreement of the

teacher, which by the end can lead to the students exploring even more in the field of opportunities provided by Social media.

However, already now, students explore the field of e-learning 2.0 opportunities. They have probably tried a variety of possibilities and made their own preferences. What are the most common tools among students now will be explored more in the following chapter.

3.3 Tools that students are familiar with and prefer now

As there was an international project "CoCreat" starting its first practical phase by conducting a test course about creative collaboration, it gave a good opportunity to carry out a survey[8] on the preferences what students from different countries/universities have when it comes to their (studying) online habits The initial participants of the course were from University of Oulu, Finland; Norwegian University of Science and Technology Trondheim, Norway; Valahia University of Targoviste, Romania and Tallinn University, Estonia to whom for more international opinion, students from Spain and Cyprus and also from Tallinn University were included.

3.3.1 The methodology of the survey

The data was gathered by an online questionnaire that was available for 6 weeks. The selection of the students answering the survey was made on simple causes using the opportunity sample approach. On spring semester 2012, a pilot course for the project called "Designing technology enhanced learning" (TEL) (see Appendix 3 for the course curriculum and case study chapter for detailed description) was conducted. The participants of the course were asked to reply an online survey. All together 73 students started to fill the questionnaire, but 5 did not complete it. The survey was made using LimeSurvey which is free of charge, yet easy to use with enough varieties for designing the questionnaire. It was online, so no restriction on the access was applied. After closing the questionnaire, the data was analyzed with SPSS and

[8] *Available on http://ahejuz.havike.eenet.ee/limesurvey/index.php?sid=48395&lang=en. The PDF form is inserted to the digital version of the thesis.*

Microsoft Excel was used to design the tables. The following part will now concentrate on the findings from the survey.

3.3.2 General division of the respondents

The initial idea was to get a wider picture on what do international education field looks like when it comes to using Social media. However, the activity from southern part of Europe was not that high. Therefore, the analysis will concentrate only on comparing the habits of Estonian students to Finnish and Romanian students. To start of, a general chart of how the answers were divided will be presented.

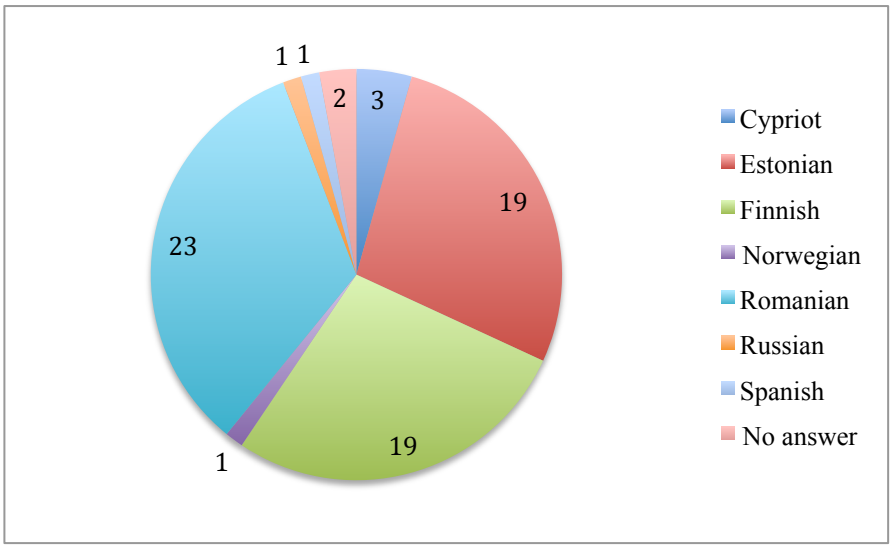

Figure 5: National division of the respondent, general survey

The quantity of the students answered to the survey, is quite equal in all three countries, which makes the comparison a bit easier. The theoretical part described a little closer the Net Generation (people who have born with the skills), there for the age of the students plays role in how adequate they consider themselves. The average age for Estonians was 30.5, for Finnish almost 41 and for Romanians exactly 23. However, if to watch the statistical data, then this gives much clearer picture.

Participants by age					
Nationality	N	Min	Max	Mean	Std. dev.
Estonian	18	20	52	30.56	10.019
Finnish	19	22	52	40.89	8.485
Romanian	23	19	34	23	3.891

Figure 6: The average age of the students participating in the survey

From that you can see the age of Estonians differing from the average the most, where as Romanians are quite in the same age. The youngest and oldest answerer among Finnish and Estonians are almost the same age, but probably the Finnish students are generally older, if their average age is higher. From that we can infer Estonian and Romanian students likely to be more skilled as majority of them belong to the Net Generation. The age however, is not the only indicator. There are also capabilities like the Internet connection and equipment available as well as previous experience that play role in how adaptive the students in general are towards using social media in their studies. Next the thesis will describe closer the previously mentioned issues.

3.3.3 The Internet habits and behavior

The first indicator, that shows the age to have no role to play, is how often do the students connect to the Internet. Almost all students use it at least once a day or in rare case 3 times a month/week.

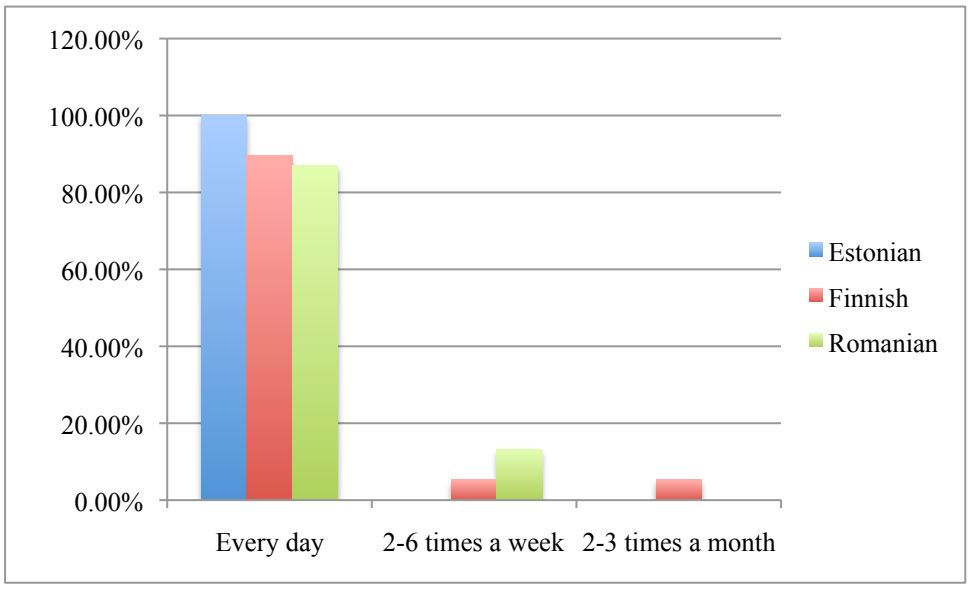

Figure 7: The density of using the Internet among students

The other important factor is how do they connect to the Internet. Even here, there were no remarkable differences as "personal laptop" and owning "a computer with Internet connection at home" were the two most popular ways irrespective of the origin of the student. In some cases, a student had opportunity to use both of them. However, Romanians are the most active in using school computer classes; public Internet spaced were almost not used.

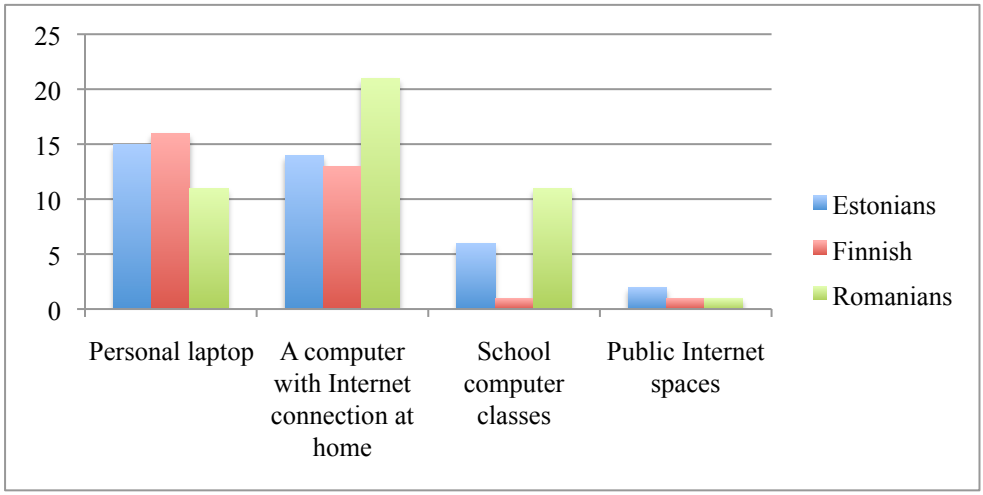

Figure 8: The ways to connect to the Internet

In addition, several other ways to connect were mentioned: mobile phone (11 times), at work or via work laptop (6 times), iPad 2 times. Therefore, you can say that the students are very well equipped to gain access to the Internet.

Moving on to more detailed information, then next part of the survey concentrated on the Internet behavior the students have as well as the privacy issues. The grades, which were possible to give in case of every statement, ranged from 1-5 where 1 marked "not important at all" and 5 "very important" (the same grading system was used with every question). In order to map the daily behavior of the students in the Internet, they were asked to evaluate different activities and their importance. The hidden idea was to know the importance and usage frequency of the activities, which can easily be used in the studying context.

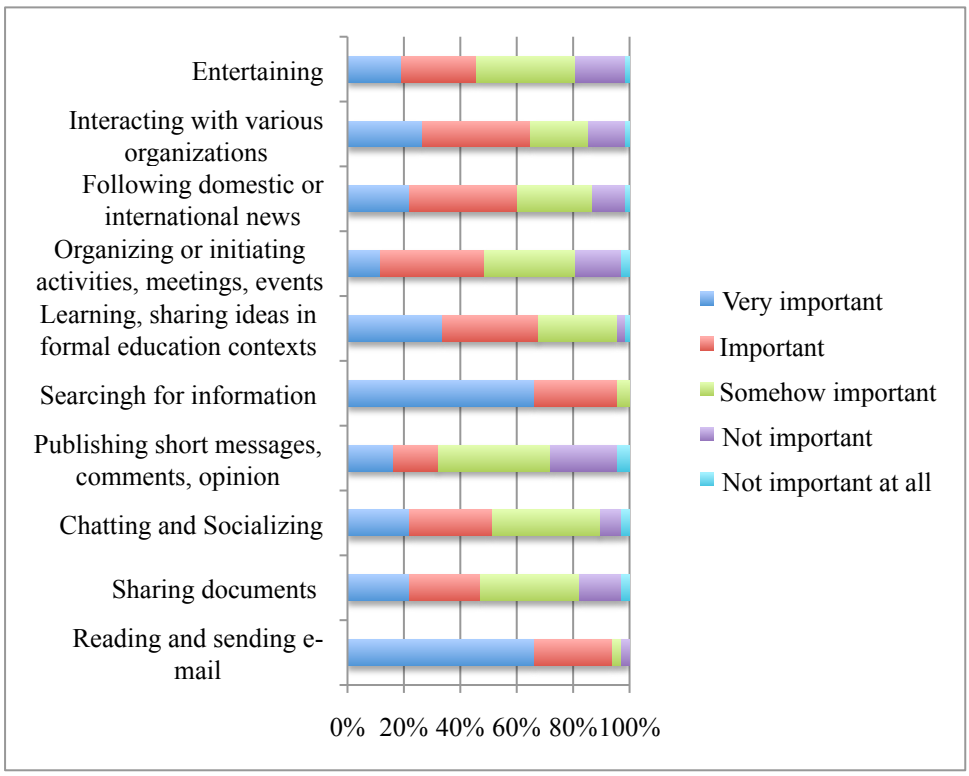

Figure 9: The importance of different Internet activities

The overal situation is guite similar. As expected, the most important activities were emailing and searching information, the last one is obviously closely related to learning. Sharing different materials and socializing were rated not that important anymore, although they are related to online learning (sharing valuable articles, interesting videos etc related to the study subject and cooperating with fellow students). Publishing short messages/opinion left also neutral opinion to the students, which for example minimalizes the possibility to use forums for discussions or commenting (making reflections) other students homework in their blogs.

To see how opened to the online learning idea the students would be in general some other arguments were given to them for grading. The overall situation is that students are rather protective when it comes to their private information (especially information related to their grades). General information related to their studies was rated not that important to be hidden.

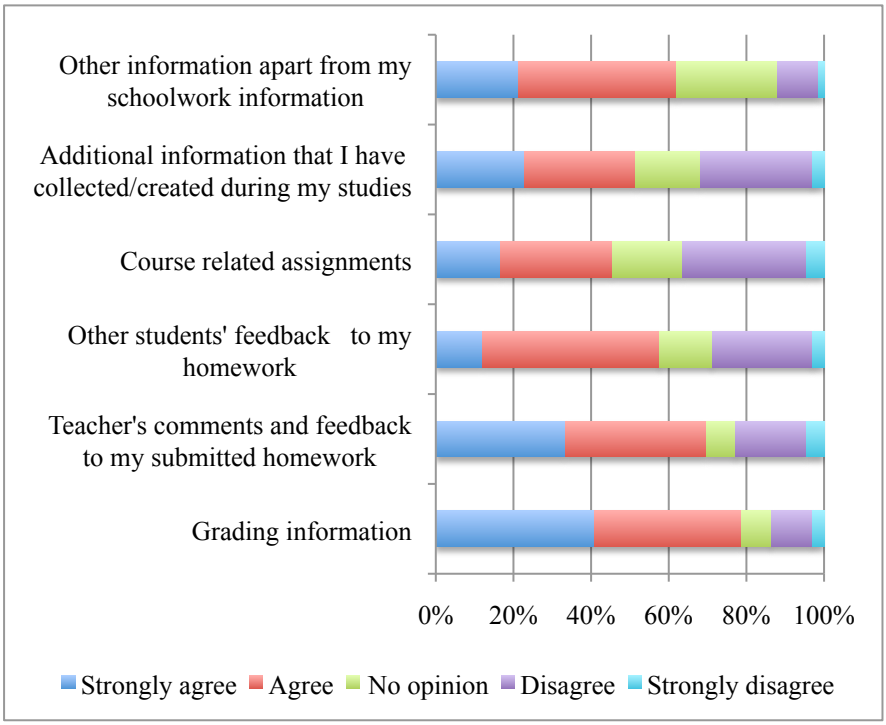

Figure 10: "When it comes to my studies, I would like to keep private by default ..."

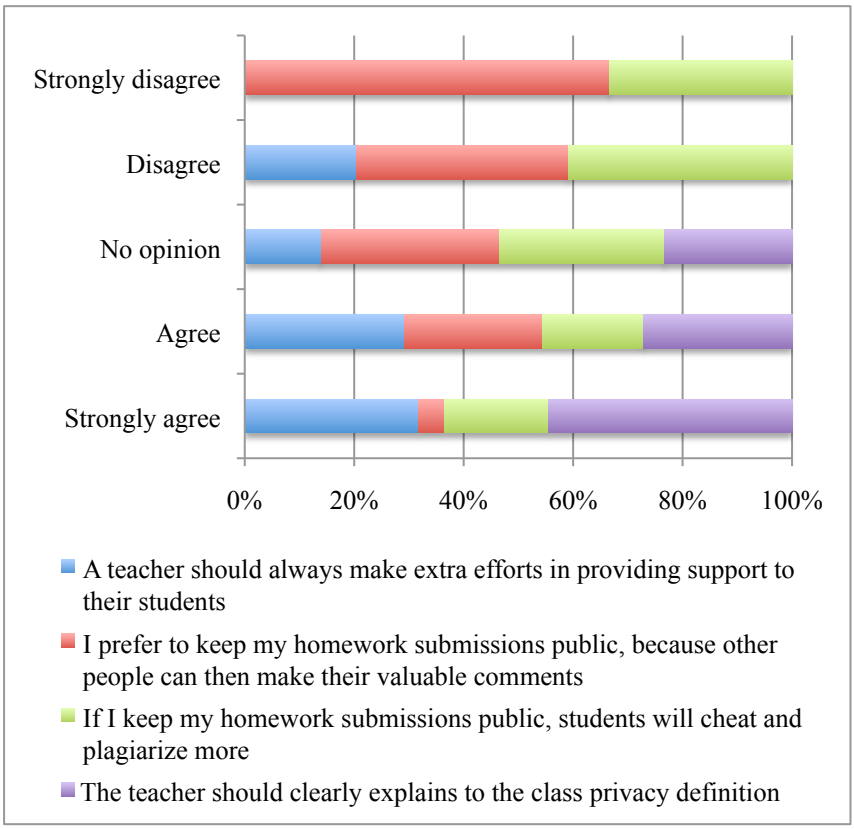

Figure 11: Other private issues

The additional question revealed, that students do not want to leave their assignments public for received feedback from other students. But the same time, they don't see that keeping their assignments public would lead to plagiarizm. This two questions would need therefore deeper invetigation in the form of conducting interviews. The teacher is left with the responsibility of explaining the essence of the term "privacy" and should also be available, when ever needed (that is however, always possible in the case of online courses).

The most informative question was about the previous experience students had with different social media ways. The experience was measured is a scale from 1 to 5, but this time the numbers marked different attitude: 1 - have not used at all; 2 - used at once; 3 - use sometimes; 4 - use regularly and 5 – use everyday.

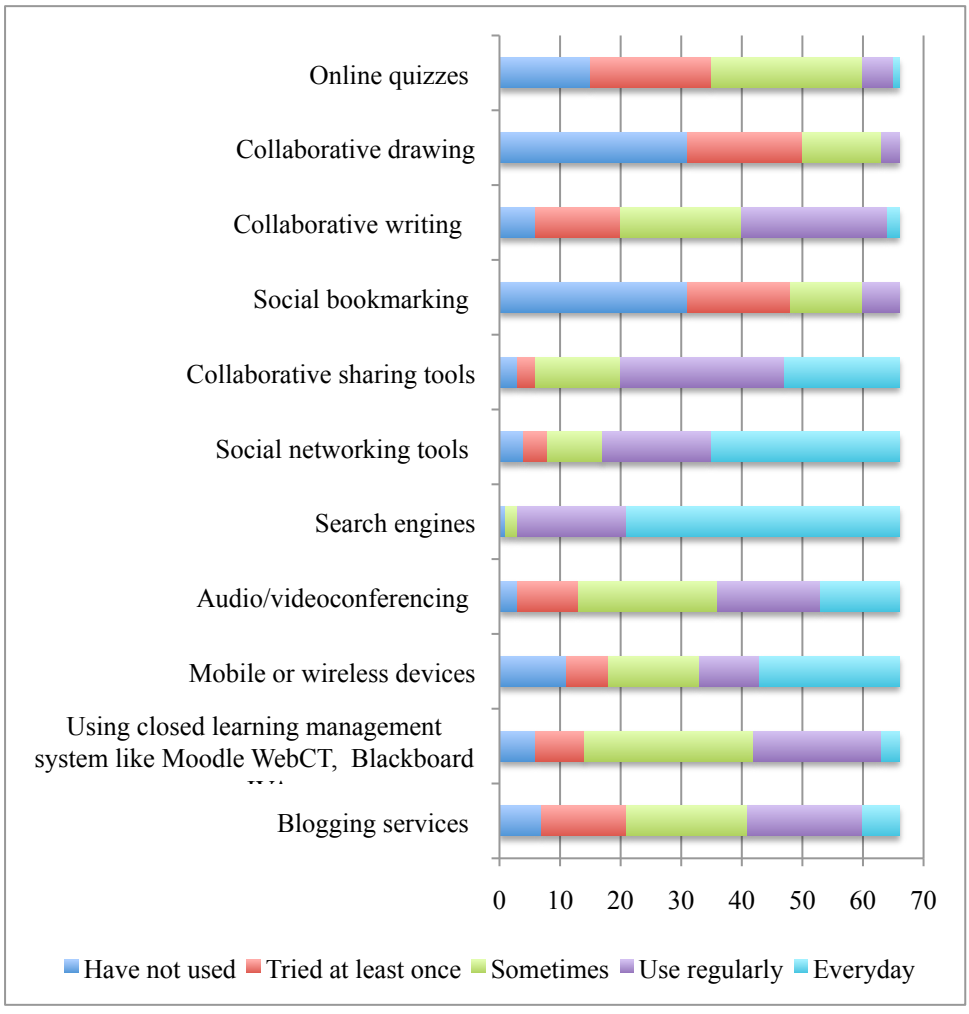

Figure 12: Using different e-learning 2.0 tools

From the experience of studying in IMKE program, the most necessary tools that were looked closely, were blog services, learning management tools, mobile or wireless devices, audio/videoconferencing, search engines, collaborative sharing and writing tools. The figure shows, that the most popular tools among the students are search engines with social networking and using mobile devices. Also collaborative sharing (using Dropbox for example) and audio/video conferencing (which becomes quite important in case on conducting national wide online course) were used more often. From the figure however, we can still assume the students to be ready in using social media in their studies as every necessary tool have been at least tried once.

3.4 Closing remarks

The previously conducted studies revealed that students tend to use e-learning 2.0 tools for four main purposes: searching information, communicating, preparing assignments and for integrated learning. The first person account described one way of using e-learning 2.0 tools in today's educational field. Even if the teacher prefers using only power point slides and/or paper based materials, the students will start using on their own initiative the e-learning 2.0 tools. Finally, the study conducted by the author, showed that age does not play that much role in using e-learning 2.0 tools, but the opportunities for access and availability. The students use the Internet daily via personal laptops or computers at home and feel quite comfortable conducting different activities there. Most popular were reading/sending emails and searching for information despite the nation. What comes to their studies, then students feel protective towards personal information, yet the three groups were similarly experienced in using different social media tools. Therefore, we could assume that the students are ready to adapt e-learning 2.0 provided that they have willingness to try out new solutions even if the first experience was not that good.

4. How teaching and learning are collaborative activities

The core task of the facilitator is to help the student in the process of learning. The difficult part is how to define learning so that it is easy to understand and measure at the same time. There is no doubt that learning in general is moving towards becoming more technology centered. Even the attitudes of students' are changing. Yet, the role of teacher is not decreasing, but stays in the phase of transforming. This chapter will focus on the different roles a teacher can take when facilitating an online course, taking into account the changing habits of the students and leading from the cognitive apprenticeship theory.

4.1 Factors that influence the learning process

Conole et al., (2008) suggest eight characteristics, which are directly related to changing the nature of the way students are working and through that also learning:

- Pervasive – the use of technology everywhere, to find, manage and produce content;
- Personalized – the learning process is interactive and multifaceted, the simultaneous use of computers, the Internet and books;
- Niche, adaptive – the use on technology has a certain purpose;
- Organized - computer is the central learning tool, which enable easy access to information (including course materials);
- Transferable – students use the same skills they've adapted in other activities to the learning context;
- Time and space boundaries – the expectation of getting immediate or near-immediate answer. Yet, students are comfortable working in constantly changing environment, multitasking and working with multiple resources and tools;
- Changing working patterns – the range of tools is emerging and constantly changing, along with the ways how the tools are being used;
- Integrated – technology provides flexibility in terms of learning anytime and students integrate successfully the wide range of diverse technology.

In general, you can say that students are comfortable with technology and see it as integral; are sophisticated users and have specific expectations – in other words, students have become very independent and the independency factor is what needs to be supported by the teacher foremost. Driven from the factors provided by Conole et al. (2008) and making some adjustments, the following figure on how technology has implicating the process of learning and what are the characteristics of it, is presented:

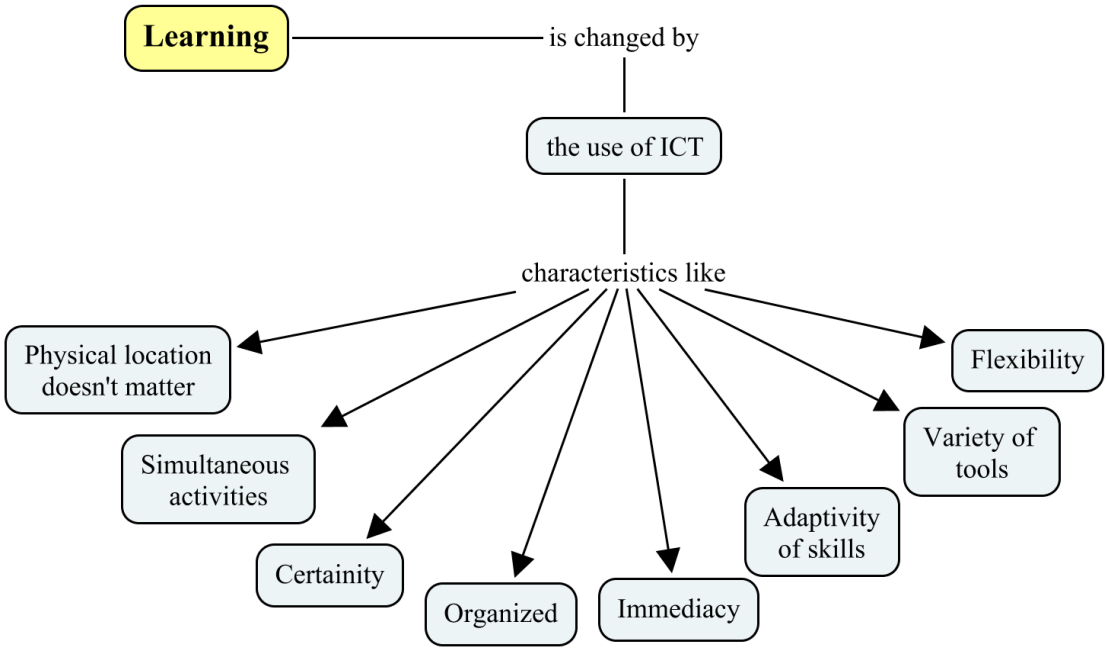

Figure 13: The factors of changing the way students work

Yet, even if the course's structure represents the most individualistic approach for learning from the student point of view, some kind of guidance by the facilitator is expected. The students get their standard knowledge from textbooks, but when facing a problem outside the familiar patterns, they feel being lost and need guidance (Collins, Seely & Holum, 1991). The following chapter will discuss how to assess the quality of a teacher as well as what are the different roles one can take when facilitating an online course.

4.2 Is it possible to measure teaching effectiveness?

There is no doubt that as long as we are dealing with the academic form of acquiring new knowledge i.e. being an official student either on the primary, high school or university level, teacher or facilitator plays great role in supporting the learning

activity. I believe that in the secondary education, teacher has the highest level of importance out of the three options written above, whereas the role of offering support while facilitating a course starts to decrease when the level of acquired education becomes higher. However, even if this thesis is focusing on conducting an online course on university level, the question of *"how to secure the high quality of teaching that the facilitator offers"* still remains? Even more, *"how to make the students "believe" in the adequate qualification level of their facilitator?"* To get reliable answers you have to make some measurements. One could state that a university lecturer is able to conduct research and based on the results, publish articles. Consequently, the number of publications refers to the level of quality. However, already 17 years ago, it was admitted that teaching and research are difficult to measure and the small correlation between publications counts and teaching effectiveness disappears - there is little or no positive correlation between research productivity and teaching effectiveness (Brew & Boud, 1995). Aren't the level of interest of the course, ability of starting discussions and answering to students' questions, in overall building the structure of the course so, that the students really listen and think along the whole time, the indicator?

If researchers are not publishing, yet facilitate courses effecitvely, the correlations of "the more you publish the better teacher you are", is likely to be weaker than beliefs suggest. Moreover, it may also help to explain the common assumption in higher education that researchers make better teachers. If the number of publications is no longer relevant, then other factors (personality, communication skills, deeper interest to the topic etc.) start to become more important. When there is no relation between teaching and research (measuring teaching goodness via research done and articles published) how do judge over the effectiveness of teaching? Good teaching cannot be measured by the number of hours taught. The most common way for evaluation in universities is asking students' feedback on the courses. This grading method is based on the evaluator's perceptions, which reflects personal opinion of a student and cannot be generalized to the whole group nor does it give fundamental data for grading the level of goodness of teacher. The only teaching, which is valuable, leads to effective learning (Clotfelter, Ladd & Vigdor, 2007). How can the teacher influence the improvement of the learning results, is another issue. One way is

through the role (s)he decides to take. While facilitating an online course, the teacher has different role to chose, which will be now described more detail.

4.2.1 The role of a teacher in facilitating an online course

Guiding the student through massive amount of information, giving him/her enough freedom and independence to choose the most important pieces of knowledge and at the same time offer support, is in my opinion the main characteristics a teacher needs to have. Yet, with the change of learning process in general, also the role for teacher is changing from the giver (offering knowledge) into the supporter (guiding in the process of getting new knowledge). An online course is usually conducted in a jointly used environment, either in a blog, virtual world or something else. In case of online course, you cannot avoid the formulation of a community (how strong are the relations inside there is another question). Still, one cannot argue that the outcome of an online course can be a virtual community. People feel more free when they socialize in virtual community, they put on a mask of someone they'd like to be and then feel comfortable in their role (the transformation is even easy to do in 100% online course, where you have no need to meet your fellow participants face-to-face). The participants feel equal as everyone has the opportunity to enroll to a virtual course in case of open courses (if a course is part of one study program, then you can come across with limited access). In case of any community, after a while the participants feel more relaxed in a familiar environment or a group – there is a connection between the members.

What is then the role that a teacher has to take in online course? As the conditions for a lecture are already different form what we are used to see, how can a teacher be a supporter and a controller effectively at the same time? One theory that explains this situation in more detail is the theory of cognitive apprenticeship. As one part of this thesis is also a case study, where the author participated as facilitator, therefore the possibilities for teacher need to be described. The next chapter will focus on the theory and suggest the roles a teacher can take in facilitating an online course

4.3 Cognitive apprenticeship

The theory of cognitive apprenticeship (CA) is based on the understanding of how individuals learn, addressing to the problem of inert knowledge and making the thinking process of a learning activity visible to both the students and the teacher (Ghefaili, 2003). It does not give to the teacher the formula of stre-learning 2.0instructions on how to teach, but instead it is an instructional paradigm for teaching (Collins et al., 1991). To put it into other words, CA supports the independence of the students in the learning process leaving the teacher with the more supportive role instead of *"being the one who is doing all the work"*.

CA is rooted from four different notions (Ghefaili, 2003):

- Socio-cultural theory of learning – says that knowledge acquisition is essentially and inescapably a socio-historical-cultural process where as according to Lev Vygotsky, the social and cultural interaction play the biggest part (the physical objects can be used as tools for learning, but social tools like language, play the most part in developing and learning). Researches have shown that children learn cognitive and linguistic skills from more capable caretakers, peers and teachers, who have bigger influence in developing the child's cognitive and linguistic skills.
- Vygotsky's Zone of Proximal Development (ZPD) – there are two stages of the development of a child: *actual development* (what a child can to without any help from an adult or a teacher) and *potential development* (what a child can do under guidance or in collaboration of more capable peers). But there is a gap between what a child cannot do and after a while when (s)he is able to do something, in other words the still developing area. This gap between the actual and potential development is called ZPD.
- Situated cognition (SC) – the cognitive processes are situated in physical and social context and involve relations between a person and a situation. That is why SC adopts easily the norms, behaviors, skills, beliefs, language and attitudes of a certain community.
- Traditional apprenticeship (TA) – the idea of learning from apprenticeship, has proven its effectiveness over many centuries. Learning from practice has lead to a situation where a group of novices or students serve resources for

each other and exchange their knowledge and experiences. The teacher in this situation is more skilled and has broader vision. This approach has also been practiced in the IMKE courses, where the students are given the framework where to play, but the details of the play is up to the students.

The idea of traditional apprenticeship (TA) is to show the learner how to do a task, then turn in more and more responsibility to the learner until (s)he is ready to fill the task independently (Collins et al., 1991). However, the differences between TA and CA can be better understand by observing the following table:

Traditional Apprenticeship	Cognitive Apprenticeship
Simple tasks	Complex tasks/problem-based
Physical skills and processes	Cognitive and metacognitive processes
One-on-one learning in the workplace	Learning with several students set in the classroom and laboratory
Tasks performed by observation	Tasks and processes performed by reasoning
Learning by doing physical tasks	Learning by externalizing thought processes in diagnosing problems
Learning from modeling, coaching, and fading of performance	Learning from modeling, coaching, Scaffolding, articulation, reflection, and exploration of ideas
Job determined by tasks	Learning determined by outcomes

Figure 14: Differences between traditional and cognitive apprenticeship (Ghefaili, 2003)

Already in 1995, Herrington and Oliver described situated learning and its critical characteristics, Ghefaili (2003) believed eight years later, that in order to gain best from the useable knowledge, the learning environment should have the following characteristics:

- Authentic context that allows for the natural complexity of the real world;
- Authentic activities;
- Access to expert performances and the modeling of processes;
- Multiple roles and perspectives;
- Collaboration to support the cooperative construction of knowledge;
- Coaching and scaffolding which provides the skills, strategies and links that the students are initially unable to provide to complete the task;

- Reflection to enable abstractions to be formed;
- Articulation to enable tacit knowledge to be made explicit;
- Integrated assessment of learning within the tasks.

Designing the learning environment in case of online learning, is a cooperation between the students and facilitator. The above mentioned characteristics should be taken into account, if the goal is to achieve the maximum outcome. Besides helping to design the learning environment, the teacher is responsible for conducting the course as well. In case of online course, it can be done in different ways that are now introduced.

4.3.1 The possible role of the teacher

Moving on, the six teaching methods, which the CA approach supports, can all be applied into facilitating an online course. However, the teacher here has to make a decision about, which method is the most suitable for a certain group of students. Ghefaili (2003) divides the teaching methods into three groups. The first one represents the core and helps the students to integrate a set of cognitive skills through observation and supported practice, it contains modeling, coaching and scaffolding. The three activities in the first group are also the ones originating from the traditional apprenticeship theory (Collins et al., 1991). The second one is focused on the students' ability to first observe an expert solving a problem and then gaining control over their ability of problem solving and metacognitive skills, comprising of articulation and reflection. The third group is about encouraging the learner's autonomy, independent problem formulation and transfer using the exploration method. The methods are now described in more detail:

- Modeling – the students are mainly in the observer's role. They watch the expert performing a task and focus on the way it is accomplished. The expert at the same time explains what and why is (s)he doing in order to give to the students a full overview;
- Coaching – the master provides assistance when needed by giving individual attention on difficulties, help on "critical times" or when mostly needed, providing only requested help and withdrawing unneeded help. In other words, the teacher interferes only when it is very necessary;

- Scaffolding – the tasks here are more complicated, there for the teacher is supposed to assist or complete those parts, which turn out to be too complex for the students. The students participate in the practices, but only to the level of their competence;
- Articulation – the student is expected to solve the tasks in "*think aloud*" method i.e. to explain in voice every act made and idea thought. This way, both the students and the teacher get better understanding of the level of acquired knowledge. The teacher is expected to encourage the students in explicating their knowledge, reasoning and problem solving strategies;
- Reflection – the main focus is on the students reflecting and analyzing on the work they've already done through what they increase their own awareness of their knowledge. The teacher here needs to encourage the students to compare their work with what the teacher has done as well as with what the fellow students and other experts on the field have done;
- Exploration – here the student is expected to be the most independent learner out of the six methods. They try out different hypothesis, methods and strategies on their project and through this exploration they learn how to set achievable goals, form and test hypothesis and make independent discoveries. The teacher here is expected to encourage the students on their way to independence, help to identify personal interests and pursue personal goals.

What role the teacher uses is his/her personal selection. In case of face-to-face lessons, it is easier to become the one "doing everything for the students" and making them too comfortable. But in case of online course, the students actually have no other way than to be more independent. The teacher can provide them with general material and guidelines, but it is up to the student, how well will the materials be acquired. In this sense, the methods of CA apply better in the university context, I would even say in the master's level. Being in the student's and facilitator's role, the independence part makes the facilitator and student cooperate as equal partners, who both move towards the same goal.

In conclusion, the use of social media has influenced a lot the learning process, which means also the teaching needs to adapt to new situation. It is hard to decide which criteria to take into account when grading the level of teaching goodness, but one

indicator could be using the teaching method, which leads to effective learning. The supportive role of a teacher is increasing. While facilitating online course, the teacher has to make personal decision, which role out of 6 possible to take driven from the CA theory.

5. Case study – the course "Technology Enhanced Learning"

This section of the thesis is concentrating on a more concrete example of using social media-tools for educational purposes. It will describe a set of university students, who participated in an experimental course and the findings of the survey. The survey was divided into three part: the first part concentrated on the background information about the participant (gender, age, nationality etc); the second part on the learning patterns and views and third part on learning through social media. The complete questionnaire can be found online from http://ahejuz.havike.eenet.ee/limesurvey/index.php?sid=48395&lang=en or together with the digital verson of this thesis. The thesis will also reflect the outcome of facilitator's personal observation on the flow of the experimental course. Before starting with the case study, some preliminary information needs to be introduced.

5.1 The "CoCreat" project

CoCreat project is funded by the European Commission under the section of "Lifelong Learning: Comenius, technology and languages". The full name for the project is "Enabling Creative Collaboration through Supportive Technologies" (http://let.oulu.fi/cocreat) and it joins together 9 partners from 8 different European countries. It is a three-year project lasting until November 2013. The main objective of the project is to find new solutions for promoting creative collaboration in terms of new and innovative learning models based on social media and mobile technology. The main idea is to develop and evaluate collaborative spaces for learners of different ages in order to promote creative collaboration. The objectives of the project are to envisage and to prede-learning 2.0what the future of learning could look like in ten years and to give people readiness and skills to act in these emerging spaces. As described in the project proposal, there are five goals to be achieved (CoCreat, 2011):

- To explore how SOCIAL MEDIAand mobile technology can effectively enhance creative collaboration;
- To develop and evaluate a number of different collaborative spaces where previously mentioned technologies and applications will be applied, developed and tested;

- To provide the formal (elementary school, upper secondary school & higher education), informal (leisure time activities) and non-formal (adult education) educational sectors with an increased understanding of how people can be supported to work and learn together in order to attain creative ways of thinking, solving problems and investigating different phenomena;
- To explore and test how to integrate and adapt social mobile media technology (e.g. mobile phones, handheld computers) and social media applications (e.g. wikis, web blogs, 3d spaces) for collaborative learning purposes, in a sustainable way; and
- To understand how the theory of collaborative learning can be linked to theories of creativity in order to support and enhance the process of creative collaboration.

Tallinn University (TLU) role in the project is more focusing on university students together with partners from Finland, Norway and Romania. The two work packages where TLU will be active are both aiming on creating collaborative spaces for students for the learning purposes. TLU will actively participate in designing the pedagogical model for collaborative spaces where the students will cooperate for their study purposes. The pedagogical model includes the practical guidelines how teaching and studying are structured based on the ideas of adaptive problem solving process in both collaborative spaces. It also includes the design of technological solutions and the creation of all the learning materials needed.

5.2 The underlying learning theory and facilitator's role

The previous part introduced the different roles of a teacher in facilitating an online course. From the perspective of the TEL-course, the author, who also acted as one facilitator, had mainly two roles: coaching most of the time and scaffolding in some parts. These roles were also suitable in the sense of how the learning process for the students turned out in the course. Yet, one specific learning theory that was used through out the course is quite hard to define (as also the teacher had double roles). However, the four characteristics of learning according to Conole (2008) (reflecting on experience and show understanding; frequent interactive exercise and feedback; providing support for independent learning; and supporting collaborative activities)

were represented in mutual relation. The students activities involved thinking and reflection; conversation and interaction; experience and activity and evidence and demonstration. The interconnected characteristics are well described on the following figure:

From the personal observation, the learning process of the course can be described as **situated learning**, since in there the process is seen as a social participation and the focus is shifted from individual and information to emphasize social learning and communication/ collaboration (Conole, 2008). In the course, the most vital aspect was to encourage the teams to work as one, to have active collaboration and cooperation even if the physical meetings were not possible. According to Herrington and Oliver (1995), in case of situated learning also the presence of teacher, who is observing the group work in general, is very important. On the other hand, the students must be exposed to the teacher and/or expert, which means this theory cannot be practiced in a physical classroom. The two revealed also three characteristics of situated learning environment, which need to be considered. Those are:

- Collaboration – the construction of collaborative learning is supported and both interaction and activities should engage the higher thinking and critical reflection. In other words, the students are encouraged to learn from as well as share information to each other and by that way promote the level of thinking to grow;
- Reflection – it is no longer enough from the students' perspective that they have some kind of understanding on some topic. They need to have a wider vision or at least the will to see things from different perspective. If the student is adjacent to a topic, it does not show the information to be relevant;
- Articulation – the exchange of knowledge and opinion is encouraged. There for discussion is promoted, which also leads to the sharing of different perspectives.

Being a tutor for two international groups of students with different level and variety of using Social media tools for learning, it was a challenge to ensure development for each student. Lead from the standpoint of Brew and Boud (1995) which states *learning to be an individual activity, even if it is done in groups, what is learned is unique to the individual*, I had to take each students as a separate person. More over,

the evident cultural differences in terms of communicating (Conole, et al., 2008) were for me clear after some weeks. If you observe table 23, you can see already there the differences in cultural background. The group work was done together, but each member of the team had to work through the theoretical material independently. The role of the teacher was mainly coaching and scaffolding (Ghefaili, 2003) – the teacher was always there for the students when they needed help, but other wise kept on the background and let the teams work as they felt most comfortable. As a facilitator, I gave the groups as much freedom and independence as possible (the aim of the project was also "enabling creative collaboration via technologies") i.e. I visited the Moodle environment more if there were weekly tasks, and not so often if the task was to be filled in two weeks. My main supportive activities were in encouraging the groups to work and answering some additional questions the students might have. Although the facilitator had the same role to play, the working methods for the teams differed significally.

5.3 The course "Designing technology enhanced learning"

The first part of the project with the input of Tallinn University, by the time this thesis is submitted, is almost at the end. On spring semester 2012, the four partners (University of Oulu, Finland; Norwegian University of Science and Technology Trondheim, Norway; Valahia University of Targoviste, Romania and Tallinn University, Estonia) conducted the pilot course for the project called *"Designing technology enhanced learning"* (TEL) (see Appendix 2 for the course curriculum). The aim of the course was to familiarize the students with the key concepts, competing theories and approaches of designing Technology-Enhanced Learning (TEL). In collaboration with international students they were to develop practical skills of setting up, implementing and evaluating the use of distributed set of integrated TEL systems and tools, and they as a teamwork design a prototype of an advanced TEL course. The duration of the course was 14 weeks lasting through the whole semester. The kick-off meeting via Adobe Connect Pro was held on the 24th of February, Estonian students had face-to-face meeting with the local facilitators ten days before. The main aim of the course was to promote collaboration of students from different countries to cooperate in the most operational way. As one of the goals was to promote using different technology and tools for collaboration, the groups

were to choose at the beginning of the course tools, which they use for collaborative writing and ways for communication. At the beginning of the course there were 80 students who enrolled, the detailed division of them by university is the following:

- University of Oulu - 33
- Norwegian University of Science and Technology Trondheim - 1
- Valahia University of Targoviste - 41
- Tallinn University – 5

The students were divided into groups of 7 or 8 depending on when their registration was accepted, all together 12 teams were formed. The division tried to follow the rule of each team to be as much international as possible. Due to the fact that majority of the students were from Finland (41.25%) and Romania (51.25%), their proportion in the teams was also higher. Each of the team got one tutor who'd support and guide them through the course. If the tutor was from another country, then the students still had the right to turn to their local facilitator for help (although it was preferred to solve any issues with the team's tutor).

The course structure was quite simple. There were weekly task (depending on the topic and its volume, it could have been also two weeks task), which the team had to solve together. From my point of view, the time given to fill different tasks was unequal from the content point of view. Still, the two teams I tutored, managed to work as a team and finish their tasks in time. There were issues where they needed more the tutor's guidance, but in general when their roles were divided or if they had had a meeting on the topic, their cooperation was smooth. However, there were issues that needed more attention and became somewhat little reasons for delays in starting with the weekly tasks. These situations will be described more in section focusing on obstacles.

The majority of teams' discussions were held in the Moodle environment (http://moodle-test.kyamk.fi/) and for this course the forum was closed for people not related to the course. The students were also encouraged to communicate with each other via different interactive environments as Adobe Connection or Skype. The preference however was not to use e-mails for communication. The project itself

promoted Second life as main environment for communication, therefore the next chapter will focus on explaining this choise.

5.3.1 Second Life – a virtual classroom?

Second Life (SL) is a well-chronicled digital fantasyland (Alter, 2007). Since it was already decided at the first meeting between the partners, that SL will stay as the virtual classroom for students to meet in their group (for that reason each group had their own separate meeting places created) as well as to have the general course gatherings if needed, it is necessary to explain what was the cause for this resolution. SL is considered to be one of the virtual game worlds i.e. a platform that replicate three-dimensional environment in which users can appear in the form of personalized avatars and interact with each other like in real life offering the highest level of social presence and media richness compared to other social media tools (Kaplan & Haenlein, 2009). Fominykh, Prasolova-Førland and Divitini (2011) add creativity to be promoted together with novel solutions and 3D Collaborative Virtual Environments (CVE-s) are very promising in supporting creativity. As the part of physical meetings among the teams was impossible in the TEL-course, the expectation was that meetings in SL would bond the students and make them feel greater team spirit. Experts have actually been amazed on how closely virtual relationships in SL mirror the real life (Alter, 2007). The idea of using SL as a learning environment is not a totally new concept, because it has already been used before when a chemistry course LabLife was conducted there (Palomäki et al., 2011). The Finnish team could see already a year ago the potential of using SL as one way to conduct online courses. However, the chemistry course involved students from one university leaving the participants with the chance of real-life meetings and discussions, where as this opportunity was taken from the TEL-course participants. Another difference between these two courses was about the objective. If LabLife concentrated on actually conducting lectures and practical tasks, especially for the course created SL environment, then in TEL-course the aim was to use SL as communication tool and meeting place.

Another aspect, which backs up choosing SL, is CVE-s support cross-cultural understanding. This is especially important because there is an ongoing need for

professionals, who can work in diverse environments (Fominykh et al., 2011). From this we can elicit 3D CVE-s helping to create international professionals in any kind of field.

In one of their articles, Fominykh and Prasolova-Førland (2011) brought out several factor favoring CVE-s for conducting meetings. Most important of them are brought out down:

- These environments have the potential and possibility to support collaborative work with various types of content. The manipulation of the content, uploading, creating and sharing (3D objects, text, graphics, sound and video) is something characteristic to the CVE-s;
- Interaction in a way that conveys a sense of presence, which is in lack of other media (avatars, activity in 3D spaces, communication) resulting in establishing and supporting learning communities;
- CVE-s are being used more and more for virtual activity – the number of education- and research-intensive institution, which use them for presentations, promotions, conferencing, sketching, training etc. and universities building full-scale, highly realistic virtual campuses with various functionalities, is a growing number.

Because of these reasons, the choice of SL to be the primary communication environment is justified. However, the choice based only on the opinion and prediction of the experts, there for later analysis will show, if the decision was right or wrong.

5.4 Collecting the data

The data of the course was collected in two ways. Similarly to the first survey introduced in chapter 3, an online survey was conducted to structure the general attitude of the students. The selection of the students answering the survey was made once again, using the opportunity sample approach for the TEL-course participants. The difference was that at the same time also personal observation was made on the course itself and how the collaboration inside the teams was going. The questionnaire was the same as used in chapter 3, but the approach how to handle the data, was different. In case of the survey in chapter 3, the idea was to compare different groups

of students and their preferences. In this case, the aim was to see, how previous skill and experience affect the cooperation of cross-cultural study groups. The questionnaire was revealed on the 1st of March and was opened for one month. One threat for the survey to fail was the low level of students' activity in filling the questionnaire. To encourage them, one reminding e-mail was sent to all participants few weeks after revealing the survey, as well as all local facilitators of the course were asked to remind the students to fill it. Before final closure one month later, the last request for answering was sent. The same time, personal observation and notes on how the teams worked and how cooperative the participants were among their team, were made. All together 45 completely filled questionnaires were returned. The survey was made using LimeSurvey which is free of charge, yet easy to use with enough varieties for designing the questionnaire. It was online, so no restriction on the access was applied. After closing the questionnaire, the data was analyzed using SPSS and the describing chart were done in Microsoft Excel. The following part will now concentrate on the findings from the survey.

5.5 The results of the survey

The thesis will continue with introducing the findings from the survey. All data was analyzed thoroughly and will be presented in the clearest way possible.

5.5.1 Background of respondents

As stated earlier, there were 80 participants who registered into the course. All together, 49 students started filling the survey and 45 completely filled questionnaires were received. 2 of the questionnaires were half filled, there for when describing the background of the group, 47 answers was used. To exclude any misleading information about the nationality, it was also asked if the student was an exchange student in his/her home university, which non of them were. The division of the answers by country was following:

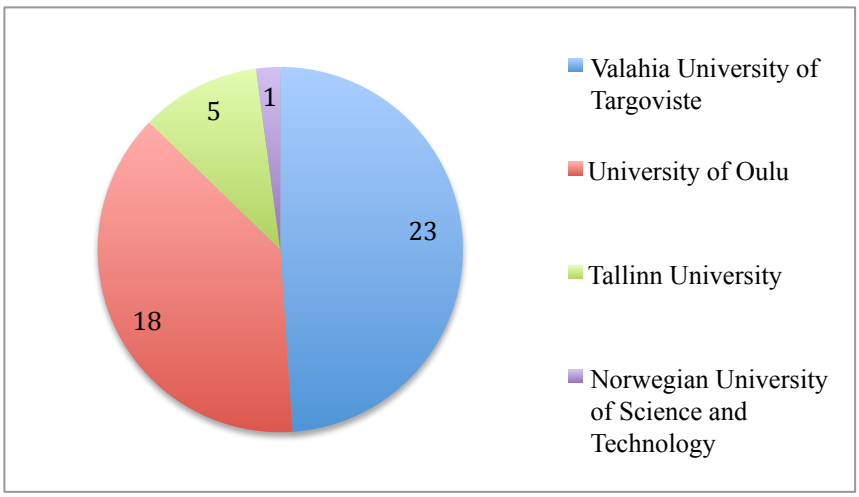

Figure 15: The division of the answers by students

The gender division was equal, 23 male and 24 female published their opinion. When it comes to age of the group, then for Estonian and Finnish students the average was higher (Estonians 34.6 and Finnish 41.3), whereas for Norwegian and Romanian students lower (Norwegian 24 and Romanians 24.1). The average age for the whole group was 31.6, one student preferred not to reveal his/her age. As seen from the table, then the age range was quite wide, which probably reflected also the general outcome of the course.

The age of the group	
Valid	**46**
Missing	1
Std. Dev.	10.941
Minimum	19
Maximum	52

Figure 16: Average age of the group

The educational background, which can indicate how pre-experienced the students might be, differed also – if majority of Romanian students were studying on bachelor level (the latest graduation level was marked as "higher education"), then Finns and Estonians were at their master studies (one of them actually acquiring second master). Two of the participants did not want to reveal their educational status. A detailed table is seen below:

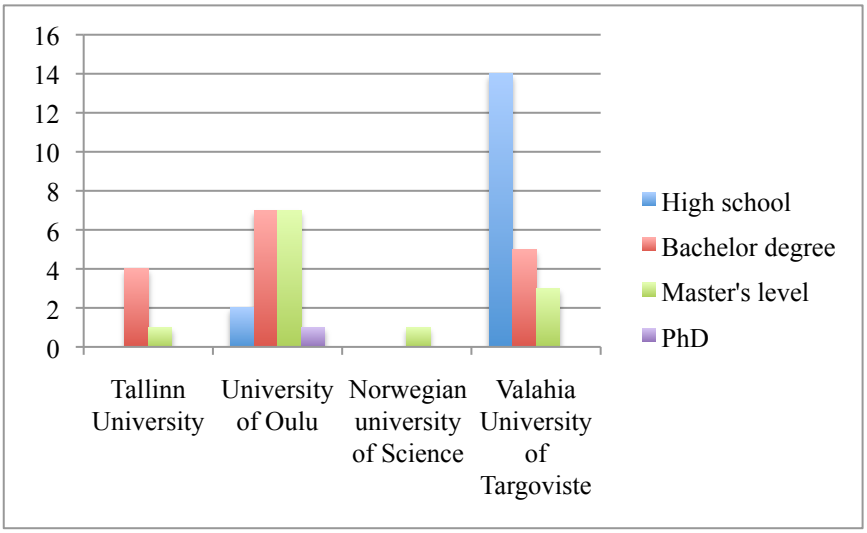

Figure 17: Educational level of the participants

As only one student from Norway participated in the course (who answered to the survey as well), the Norwegian answers will not be included into the analysis from now on.

The frequency of using the Internet and the ways of accessing it was another interesting fact to know - do they have their own laptops or personal computers at home; maybe they prefer or have to use school computer classes or public Internet spots; or was there even some other ways to connect. Can their be a relation between the more active participants having personal devises? What turned out from the questionnaire was that 42 people out of 47 admitted using Internet daily (4 of them said the usage level to be 2-6 times a week and 1 uses the Internet 2-3 times a month). This number was actually higher than expected, because it was assumed the frequency to differ more compared to Northern and Southern – European countries. In case of accessing the Internet, location in the sense of country did not play any role.

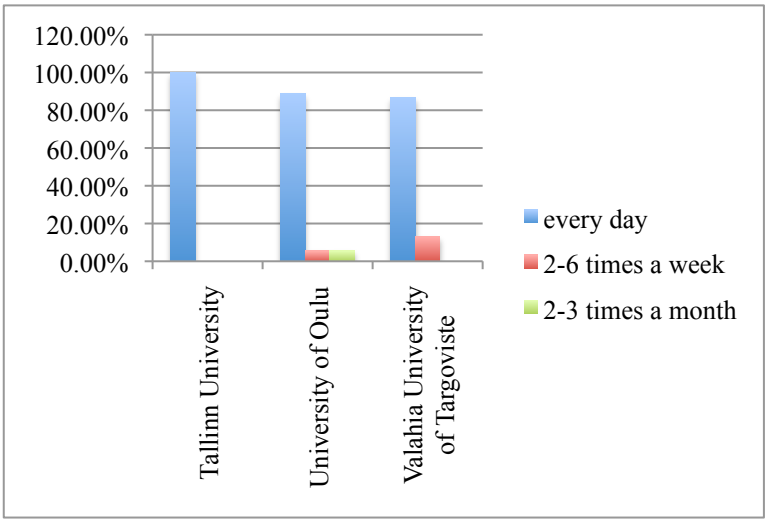

Figure 18: Thefrequency of using Internet

When it comes to the accessibility, then it revealed that each student had either personal laptop and/or a computer with Internet connection at home. Some of them had also additional possibilities like mobile phone (9 answers), using computer at their work (2 answers) and having other mobile devices like iPad (2 answers). The assumption therefore was that participants will be very active in the learning activites. The connectivity ways can be seen below:

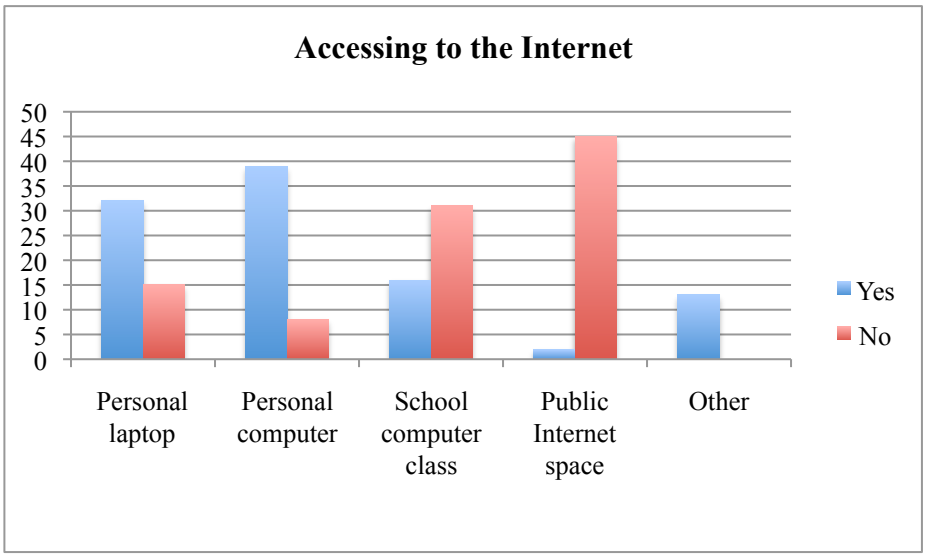

Figure 19: The ways students access to the Internet

In order to get a better idea on how skilled the students are in using different possibilities of the Internet in everyday life, they were asked to compare the importance of various activities bearing in mind their daily routine. The figure in

every table shows the average importance of certain activity for the university students, whereas 5 states the activity to be very important and 1- not important at all. The table below indicates the division between the universities how the ten different activities were graded. This was more important to know as it gives fiction on the general skill level. Let it be clear for the reader that when the comparison was done based on the activity (not by university), students felt information searching and reading/sending e-mails to be almost equally important. Entertainment, however, was scaled the lowest.

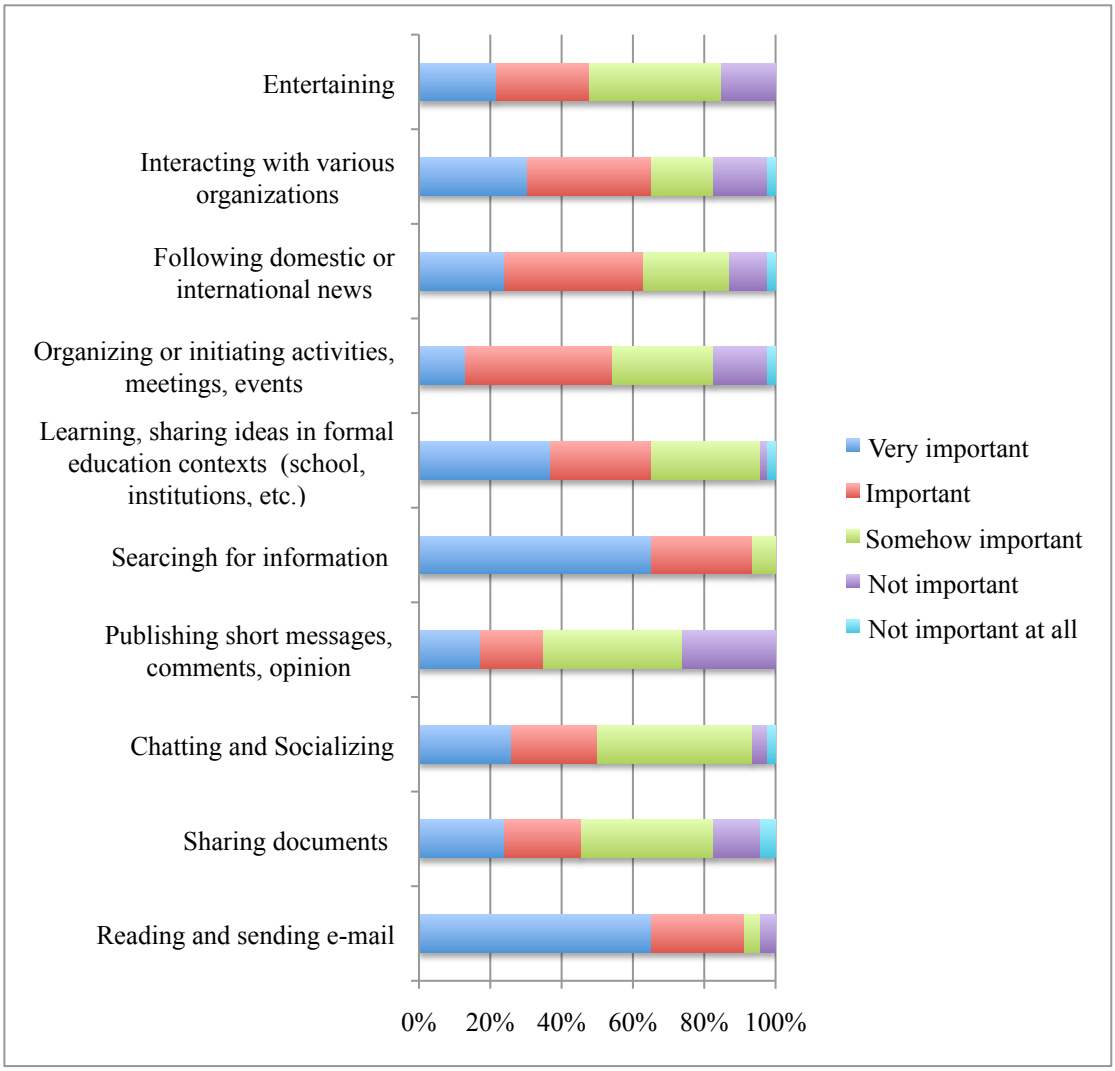

Figure 20: The importance of different activities in the Internet

The table up describes the daily behavior that the course students have. Once again, reading/sending emails and searching for informaton were rated as the most important activities in the daily routine. In the context of the TEL-course, only four indicators

were taken into account baring in mind the structure of the course: sharing document; chatting and socializing; publishing short messages, comments, opinion; and searching for information. If to ask from a person how important (s)he thinks one or other activity to be, it can also reflect how competent they are in the same issue or their willingness to adapt new trends, as people tend to use tools/ways/options that are better known for them. From than we can say the students to be equally skilled and prefer searching information rather than publish their opinion. However, as publishing short messages, comment, opinion was rated quite not important out of the four activities achosen (but in case on online course you are expected to share your opinion in public, even if the learning environment is closed). Therefore, this question was looked more close in the national wide sence.

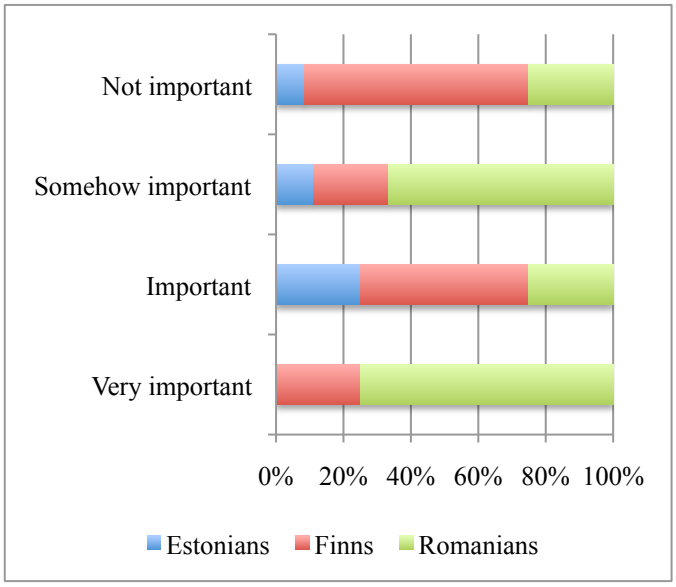

Figure 21: Publishing short messages by country

Publishing short messages is mostly important to Romanians, althought the proportion of those, who feel it being not that important, was also high. Finns on the contrary do not practice daily sharing their opinion, which might become an obstacle in the course.

5.5.2 Learning patterns of the students

The second part of the survey concentrated on publishing in the web and the students' opinion about that. As the issue of safety and privacy has caused a lot of discussion,

especially whether online learning should be adapted as one form of conducting a course, then the students were asked how they feel about having a control over publishing in the Internet, who has or should have the control over publishing in the web and what kind of studies related information they are willing to reveal to others (by others it was mostly meant fellow students taking the course simultaneously). These opinions were vital to know since their standpoint reflected also how cooperative and active they will come during the course. If they are very skeptic about the tools and ways chosen for the cooperation, it would have been quite difficult to form a collaboratively working team, especially if the members have no way to meet in real life. The following three figures describe the students' attitude towards these issues.

The first table indicates, how the students feel about showing their public opinion. One characteristic of online learning is also (somewhat) public discussions in forums or other networks, commenting on blog posts, general discussions in audio/video tools etc. The table shows that the more opened to others (the random visitor) the environment is, the more uncomfortable the students feel to public opinion. The students feel most comfortable being openminded in closed learning environments (like Moodle that was the center for the TEL-course), which gave the opinion of active communication will be occuring in the course forum.

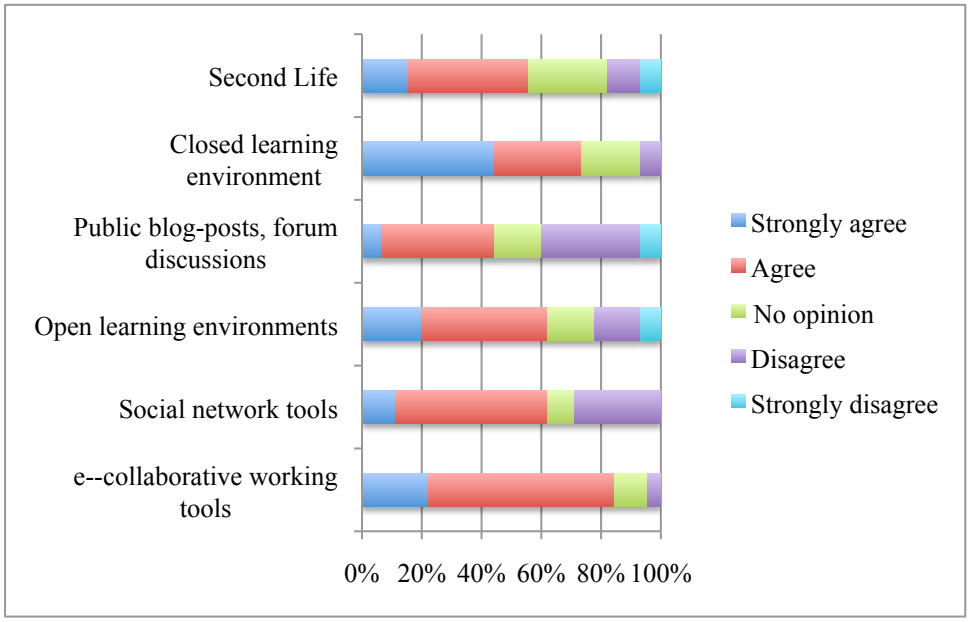

Figure 22: "Ibelieve that is safe to share comments, resources, opinion online in ...

The second table concentrated of the evaluation part of a (online) course as well as sharing data/commenting each other work. From the table you can see that students were very protective about their grades and on the feedback received, but a bit less about leaving the fellow students' feedback visible and share other information about them. The only information they were ready to leave public, concerned their course related assignments. From this we can assume, the whole group to be quite afraid to share any information with others (especially with their colleagues) and that could obstruct the opportunity to learn from others.

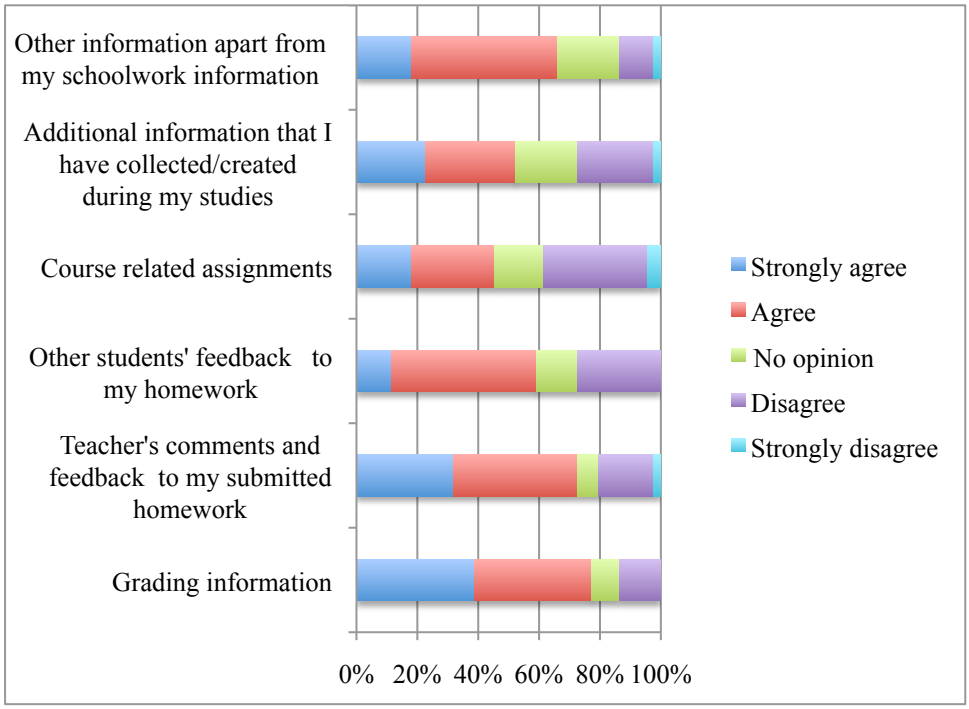

Figure 23: "When it comes to my studies, I would like to keep private by default my ...

Having your fellow students writing comments on your assignments might feel weird, but in fact this gives to the writer wider feedback of his/her work due to the fact that not only the teacher is sharing opinion from the more academic point of view, but also fellow students might have useful ideas. From the personal experience, sharing materials with your colleagues is actually a form of collaboration and a way of helping other to fill their curriculum as well. This is not an issue about plagiarisocial mediaor somebody getting their studies done easier.

The third table concentrated on other issues about privacy. What attracts the attention, is that the students agree and are afraid plagiarisocial mediaand deception by other

students when and at the same time they prefer not to keep their homework submissions public. Therefore, the fear of plagiarizm could be quite big reason in this matter. Students agreed mostly in the role of the teacher's as it should be his/her responsibility to explain the term "privacy" and everything related to it. They also expect the teacher to available easily, which is not the case in online courses.

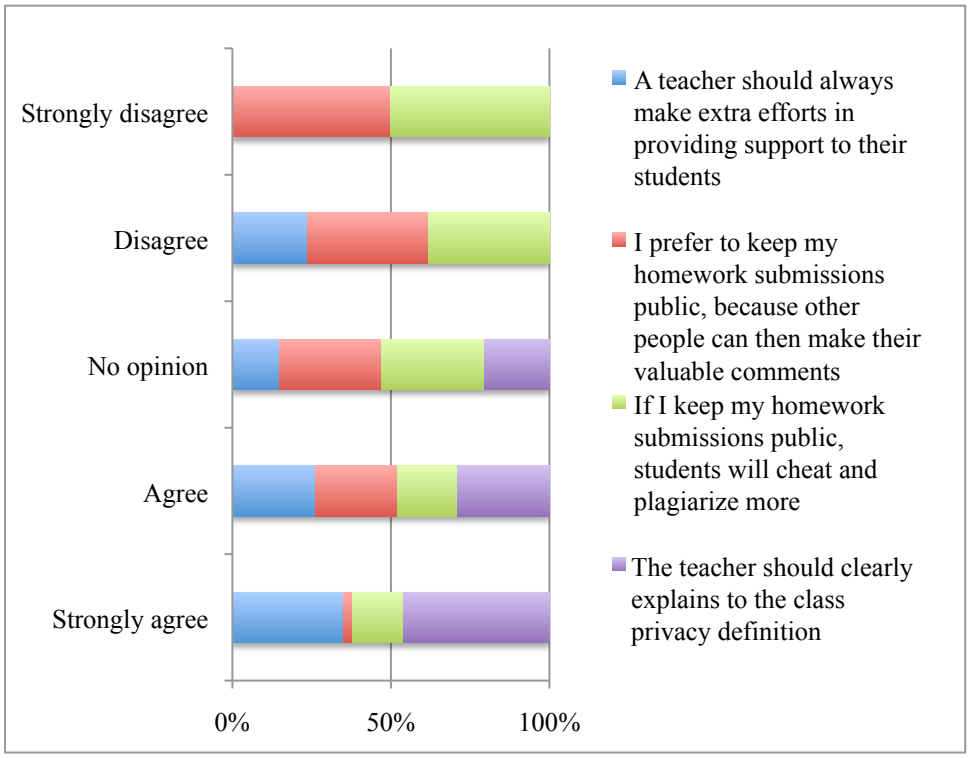

Figure 24: Other privacy issues related to personal data

The last table revealed how much do the students in general publish information into web, if they even have that kind of habit. For the evaluation part, let it be clear that in this time the scale was as follows: 1-"never"; 2-"sometimes"; 3-"average"; 4-"often"; 5-"very often". This table showed if students feel free publishing their schoolwork to the web, if in their universities this form of handing assignments is used before. As seen, the students were quite active in publishing their homework to web, therefore this could not have become an obstacle for the TEL-course performance, since the group works were supposed to be available for their fellow students and other facilitators. In the sense of being responsible, the students were likely to post something about themselves into the web and not about others.

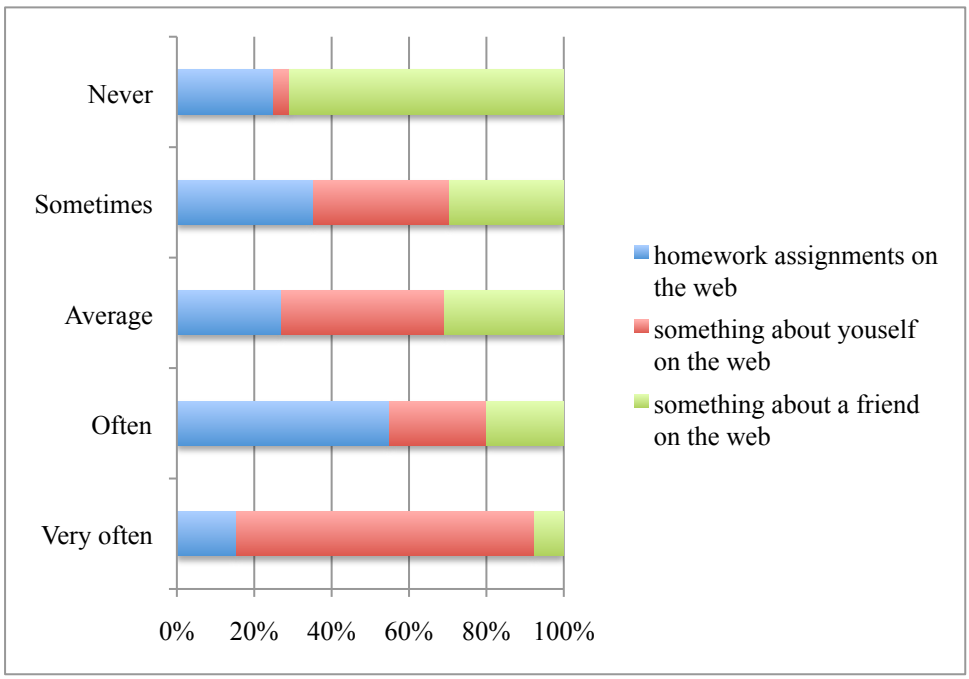

Figure 25: "How often do you publish ..."

5.5.3 Learning through social media

The third part of the survey asked only one thing – what kind of previous experience did the students have related to using different social media tools. It was vital to know their previous opinion on different tools before the course started or atleast at the beginning of the course. The frequency of usage was measured in the scale of five, where 1 indicated “have not used”, 2 “tried at least once”, 3 “sometimes”, 4 “use regularly” and 5 “everyday”. The general preparation of the group was promising as the tools were at least tried by every participant. The whole group was most experienced in using search engines (also the deviation was minimum there) and social networking. The least used tools were social bookmarking and collaborative drawing.

The table, however, do not show if the tools were used in straight connection to achieve learning goals. Yet, if the students had previous experience the likelihood of them using the same tools for learning purposes was higher. Bearing in mind a cross-cultural online course, there are some tools more important for collaboration in author’s point of view beside the mandatory learning environment Moodle and SecondLife for general socializing. Those are collaborative writing, collaborative sharing and audio/video conferencsing. In case of these three tools, the using habits

were more divided i.e. there were students with different level of experience. Below you can see the general figure of the students' skills, followed by three smaller figures comparing the national experience.

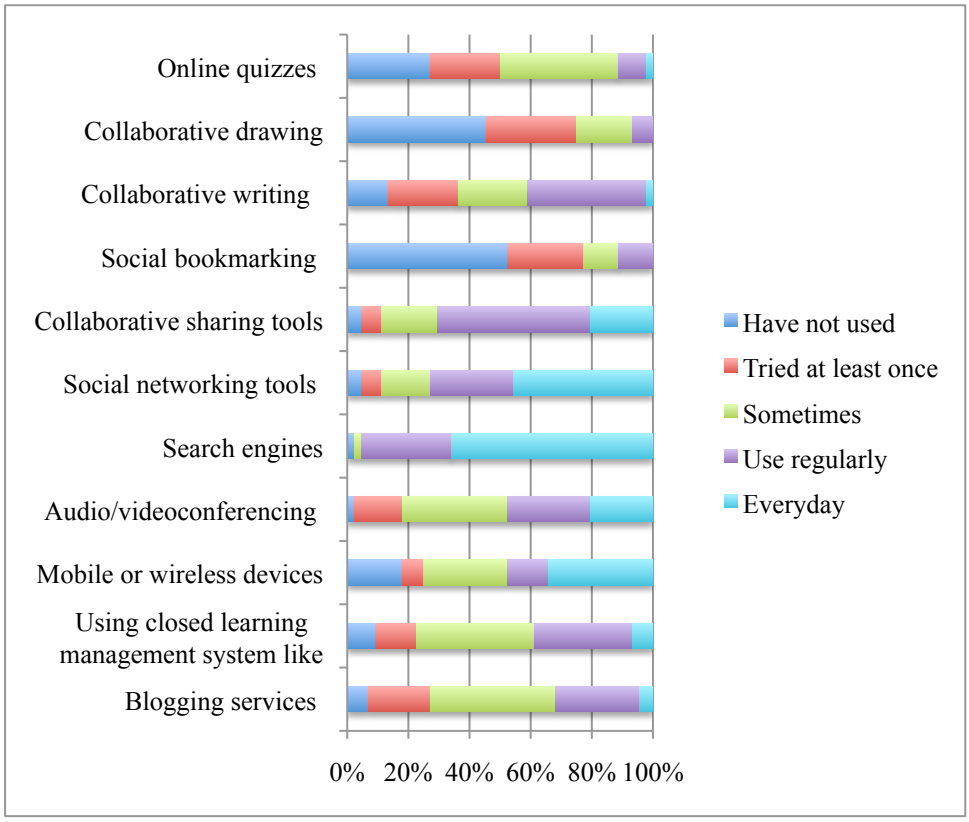

Figure 26: The previous experience in using e-learning 2.0 tools

The first table was done about the practices of collaborative writing (using google docs for example). The figure here is abit misleading, as only one Romanian student stated using this option every day and six admitted having never used it before. If Estonians and Finns are quite experienced in the field using collaborative writing either regularly or sometimes, then Romanians have less experience with that tool. However, majority of the students had atleast tried this option, so there knew what collaborative writing means and were probably ready to use it if necessary.

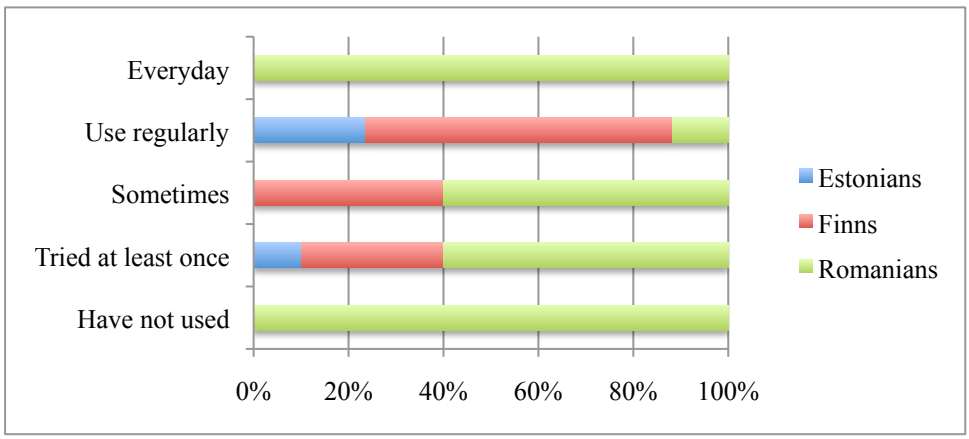

Figure 27: The frequency of using collaborative writing by nationality

The second table concentrated on collaborative sharing (using Dropbox as on example). Once again, only 2 Romanians had not used this possibility and majority of the students had atleast tried it. Estonians use it mostly daily compare to Romanians, who use it sometimes. Finns have at least tried it or use it regularly (they had the widest difference of usage patterns among nation as well).

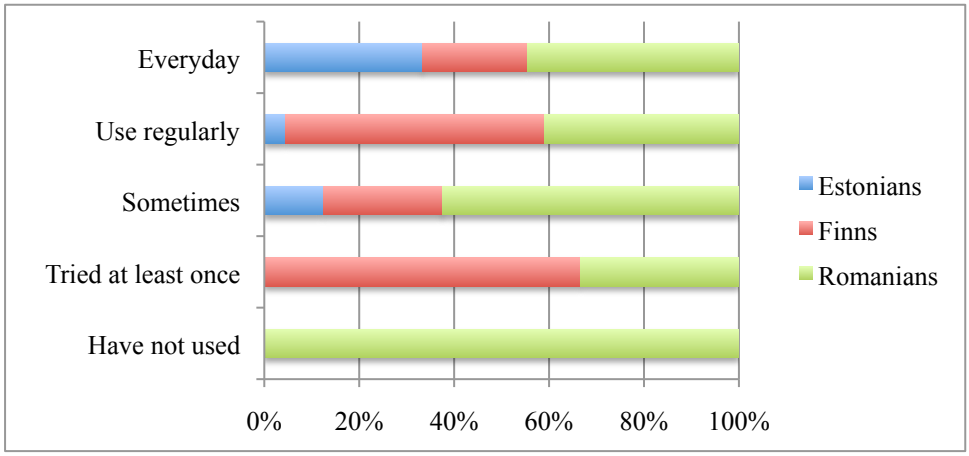

Figure 28: The frequency of using collaborative sharing by nationality

The third table explains the usage of audio/video conferencing services (bearing in mind Skype, instant messaging or other virtual possibilities). In this case one Romanian had not used these services before, six of them had used it atleast once and others had more experience. Finnish and Estonian students were more using virtual communication, whereas majority of Estonians and Romanians were using it daily.

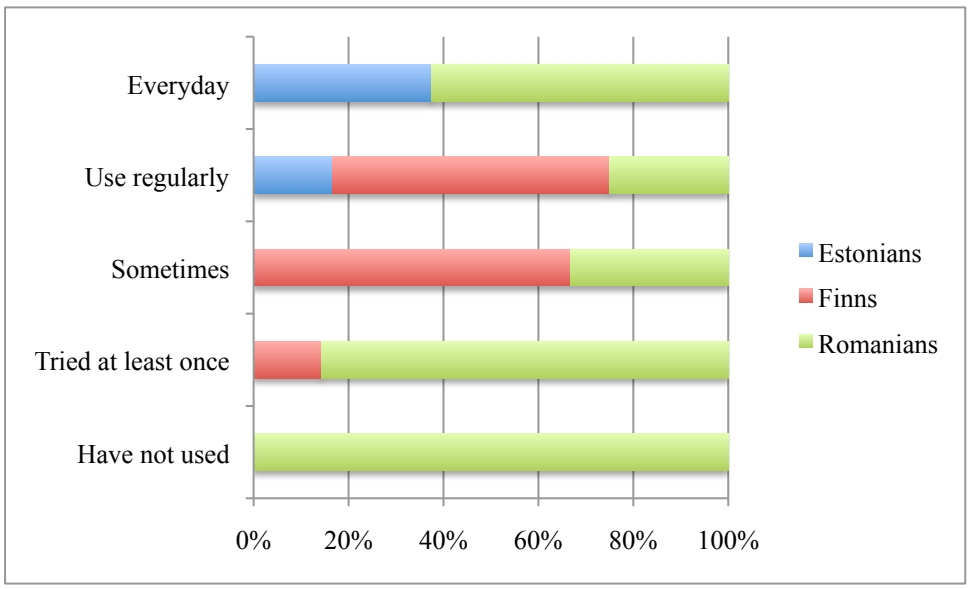

Figure 29: The frequency of using virtual communication by nations

In conclusion, the overall level of the skills and previous experience of the students, was quite heterogeneous. The idea was to promote the ones with less skills to experiment more and learn from their skilled colleagues in their team. Each nation had its strenghts and weaknesess, but in the learning context, this could only be seen as an opportunity. The questionnaire had also one open question where the respondents could reflect any experience that had changed their attitude towards online activities. The majority of the answers had common mean – with the development of Facebook and the privacy issues that have risen, they are more concerned when it comes to their personal information being revealed and therefore control even more, what they publish about themselves. This confession can be seen one factor playing role in their behavior during the course. How the course flew in reality, is described in the next chapter.

5.6 The flow of the course

This paragraph concentrates on the progress of the two teams. The data was gathered by making personal notes in the diary from first person observations and by recording participant's reflections. By the time this thesis was submitted, the course had lasted 10 weeks. During that time the team members had the time to get acquainted with each other, had several meetings and worked as a team. The most influential meeting

was held at the third week of the course, when the goal was to decide between the team members what would be the tools they'll be using for collaborative work. This was actually the point when all technical capabilities should have been brought out. Moving on, the next weeks concentrated on writing the pedagogical script, individual peer-evaluating of other team's script, writing a technical script for the course and building up the course platform.

5.6.1 Team A and Team B

At the beginning of the course, both groups had 8 members, who were quite active in participating. Three weeks after the start, first indications of different level of participation interest could be seen in both teams. Both teams had 1-2 active participants, who were trying to encourage others to be more active as well as filling the weekly tasks; 2-3 members, who participated from time to time, showed their interest to the topic, but weren't actively taking the encouraging role; the rest of the groups were passive members, who started their collaboration on the first week, but then disappeared. The biggest difference of the teams was, that Team A started their group work quite actively at the beginning of the course, which gave hope to an independently functioning group to be formed, who would actually be able to solve the tasks without any problem. Team B on the contrary didn't seem to get their collaboration work and therefore left the opinion of needing a lot on encouraging and providing help. The reality turned out the other way – Team B managed to get their active members to cooperate so, that they did not need much guidance, but were able to work independently. Team A on the other hand seemed to loose their motivation at some point and needed more encouraging.

5.6.2 Working methods of the teams

The main focus in these kind of courses, especially when the aim is to support collaboration and collaborative writing, is on communication. The students needed to decide what are the mostly used environments for the group. There were actually two aspects to consider – the main communication tool and the main writing tool. In both groups the students also thought of how to reveal the outcome of their group work to others. Even as the groups were quite different from each other, the choice was quite

similar. Group A decided to use Second Life for the main meeting place although the option of using Yahoo messenger was discussed; they stayed at Moodle for daily asynchronous writing and created team blog for collaborative writing and publishing their work. Group B on the other hand met in Skype, they stayed in Moodle for daily discussions, used Google docs for collaborative writing and also made a team blog for publishing their work. In other words, the right to choose as well as make decisions was given from the teacher to the students. There for, the students in fact were creating their own social network to support their learning – the same phenomenon was seen in Conole's et al. (2008) research.

The course was meant to be 100% online, i.e. no face-to-face contact hours were planned. As there were a lot of students from Finland and Romania, actually they made up the majority of the course participants, then these students were probably able to meet from time to time also in physical life. When there is an online course, which has no physical meeting hours, it is even more difficult to create team spirit among students and that is a minus for online courses. Face-to-face meetings with tutor are necessary as well as important and are considered to be vital for building a sense of community or belonging to the class or study group (Conole, et al 2008). For that reason, even if the course is meant to be online, there should be one physical meeting at the beginning (if it is possible in any way). There were two main obstacles revealed during the course.

5.6.3 The obstacles

The main and biggest problem was the activity of team members and therefore also the contribution each individual gave. As the tasks were evaluated from the team level, it was understandable that students, who had given more effort to the weekly task, were more concerned if the workload is divided equally and the contribution evaluated by baring in mind the individual effort. By the end of week 6, there were already four teams joined together into two due to the member been not active enough. On the 8th week of the course, in both of the teams inactive participants were deleted (after that the number of members in one team had decreased from 8 to 4 and in the other team from 8 to 6). However, as there were only active participants left, the team spirit was in somewhat higher due to the fact that who was in the team, made

his/her contribution to the team work. Still, as the different level of activity was a problem, which also was highly noticed by the students, I'd like to quote some of them.

Student A, a letter to the facilitator:

"I am a member of the X group, but I'm getting extremely frustrated with the group. In my studies I've participated in various group tasks and overall they've been good experience. ... But this time with our X group I am starting to feel hopeless, frustrated and even angry. No one seems to be answering the messages (or if they do, the depth of the conversation is "I like this topic" or "This is my address") and it seems absolutely impossible to try to make decisions as a group. I have tried to approach the group through several postings, tried to ask questions, give suggestions and point out things we need to decide already since the beginning of the task. I have tried to address this problem with our group and tried to come up with a joint agreement on how to communicate and become committed to work as a group, but it hasn't resulted into anything. ... My energy goes to posting messages that would try to get the group more active, but without any real success. This is extremely frustrating, because I have limited time to use for the studies and I would like to use the time studying, not trying to get others to start working. ... I do understand people having different schedules and not everyone being able to access the Internet daily. But I would assume people would participate in the discussions more than once a week, or at least participate at all. We haven't started anything yet, and I fear we are running out of time to be able to create anything meaningful and actually to learn something as a group. I've often been tempted to write the task on my own and by doing so use less hours to work than what I currently have used and not gotten anything done. I could have written the group work on my own, but since it is supposed to be a group task, I have patiently tried to wait for the other people's opinions. ... I don't think it is fair that we get graded based on what our group gets done together since people don't seem to be very committed to work as a group. I also don't think it would be fair for one (or two) persons doing the tasks for the entire group while others don't really do anything. I would very much like to learn something during this course and I truly was looking forward to working as a team and learning from other people's perspectives. If the communication of our group won't start to get any better I would ask to a) either be given the permission to work on my own, or b) be transferred into another group where people actually communicate."

Student B:

In the beginning of course and filling the first bigger task - *"On Xday I felt in our discussion like no one really cares, people don't understand what they should do and rather have no opinion at all. The attitude seems to be more towards "I don't know anything, have had no experience and therefore no ideas as well. Seems like they have not worked though the course materials nor looked for more materials independently. I feel like I'm the only one with some kind of vision of the outcome of the task as nobody else has revealed theirs'. I'm not even sure if they understood my vision to look some materials for theoretical background."*

In the middle of filling the task – *"It is not helping if only two people out of four participants in the meeting are students. What about group work? ... I'm not even sure if our next meeting will be held as I'm the only one who has conformed my participation. ... This situation is absurd. At the moment, there is so much theoretical part undone. Student 1 has only done some copy-paste and Student 2 just wrote something out of the context. ... Why can't we be together with X in the same team? Then the task will be done."*

After some time – *"How can a person think of taking an online course, if (s)he has the possibility to use the Internet only for two hours per week? It would be so much easier for me to do the task independently and not to bother others like this. I get only negative emotions out of this course and nothing is done. Will it be OK, if I fill the task on my own?"*

Student C:

"The TEL-course is not working. I'm one out the four people who are communicating and in those four people is also the facilitator. And the task should already be done by the end of this week. I don't see any point in filling the task on my own when others are just enjoying themselves. ... Student 1 claims they have the same problem. So this is what an international group work looks like? ... After suggesting to have a meeting to start with the assignment, I got only one reply within 48 hours. ... The completed task has to be published in 6 days and I'm not surprised if I end up being the one who finishes the assignment since others do nothing and are just being awesome. ... The tutor has urged a bit the team by making posts on what should we do next. I'll make a poll to see if anybody actually replies."

So the problem relied here – some of the participants did not communicate actively in Moodle, where the group discussion were started and in some cases also held. The reasons for this can only be imagined as by the time this thesis is sent to print, there has been conducted no feedback survey for the course in general. Moreover, the benefitial information would probably be revealed by doing interviews (for what

unfortunately there was no time) However, if to look at the survey tables about the frequency as well as the way of using Internet, it seems that technical capabilities should not have been the reason for inactive participation.

Yet, as it turned out, another point, which caused some problems, was related to technical equipment (specially having no microphones or headphones for participating in virtual meetings). As this course was brought alive during an international project, the representatives of participating universities had meetings to discuss all related issues. Because the study environments were decided during a face-to-face meeting, it was assumed that everyone knew the possibilities of their university and they agreed with the environments to be used, then necessary equipment was also available. And actually it was, but for some reason some of the students were not aware of that. After contacting personally the local facilitator (as this issue was related to the students of one university) I was assured that relevant equipment was available, the students just had to go and ask those to be borrowed. This situation indicates to some kind of lack in communication, because the students were on an opinion of their university having no equipment for lending out.

5.7 Conclusion of the Case Study

The case study provided an opportunity to experiment on conducting cross-cultural online course. The overall preparation level of the participants was heterogenious, which was not seen as a problem at first. The first big difference was in the educational level (Romanians being on the bachelor level contrary to Estonians and majority of Finns), second on the age. These two fact might played big role in how independent learners the students generally were and how much encouragement they had in revealing their oppinion in discussions. The frequency of using the Internet as the ways of accessing it, were similar, therefore the technical capabilites were not a problem (except for minor dearth in technical equipment).

While comparing the students behavior in the Internet, then the Romanians in general preferred more closed study environments contrary to Estonians and Finns, which might indicate they are not ready to fully adapt the concept of e-learning 2.0. Estonians and Finns had also more experience in using different e-learning 2.0 tools,

which made their performance to be easier. As the Romanians had to work more only on the administrative issues, this might be the reason they lost interest to the course. The same time, a lot of Finnish students quit the course as well, but those reasons cannot be elicited from the survey.

The last part of the survey concentrated on the experience the students had in using Social media tools. From there it revealed, that Estonians were more experienced in using serious tools, Finns in closed learning environment and Romanians also in closed learning environments together with searching information and socializing. So every group of students had their strenghts and weaknesses.

The personal observation of the two groups working together revealed that they had some active very participants; some, who participated from time to time and passive students. This was the case in every team and due to the high rank of some teams were joined. The low activity rate remained the biggest problem and to reveal the reasons, more thorough investigation and/or personal interviews should be conducted.

6. Conclusion

This thesis has introduced online learning from different ankles. The emphasis was on university students and their attitudes toward acquiring higher education through online learning. It was admitted, that learning habits of individuals are changing, leading into the situation, where conforming new ways are highly recommended both to the students and teachers. The conducted studies revealed, that despite the individual characteristics of people, there are still those, who are more skilled in using social media, and these are people belonging to Net Generation. The clear inequity of using technology and social media and the lack of pre-knowledge, has lead to digital divide, causing the people to have different level of skills. One important point revealed from the first account study, was the students' need for flexibility in their studies, especially when they are working and studying simultaneously.

There was three main research questions to what the thesis tried to find answers. The first asked what are the main constraints regarding course design and facilitation on a cross-cultural online course taught in an online learning environment built with social media tools? The case study revealed that as there were differences in students' background in experiencing e-learning2.0 as well as general educational level, they might have been the reasons affecting the general course flow. Another factor, that plays role in the participation, is technological capabilites. Eventhough, the case study students were mostly using the Internet daily and had access to it via personal laptop or computer, it did not influence them for more active participation.

The second question asked what are the main challenges with regard to openness, sharing and privacy in such learning environment, perceived by students? As the questionnaire revealed, the students are in general very protective about their personal data. For some reason, the fear of plagiarism was revealed as one possible reason for this kind of attitude. The overall issue of privacy has lead them to be distrustful in revealing any kind of information in the web.

The last question asked about the factors that make the students participate or not in online course? This is a problem that needs more thorough investigation. As revealed from the case study, the general activity of the course was low, causing a lot of

discomfort among the teams. The reasons for that were not revealed by the time the thesis is submitted, as the feedback of the course will be gathered at the end of the course (which will be in the end of May 2012). The factor that might had impact was their previous experience of (not) using e-learning2.0. If the level of skills is low or very different, then rather focusing on the actual learning process, the students need to cope with the general standard of skills, which might retard the general flow of the course/ team work.

Lead from the problem stated and driven by the case study, some suggestions about conducting an online course will be written down:

- Conduct a survey for background information and previous experience on the students, to get general picture of the skills;
- Divide the students into groups based on their skills (not nationality);
- Form groups of 4-5 students maximum;
- Divide the responsibility between the participants, so each member has its own topic to answer to;
- The fact independent learning should be introduced as well as participant should clear what and how high is his/her motivation to participate
- Constant rouse of participation is very important.

However, some further investigations on two topics should be conducted:

- What are the straight connections between using social media tools in learning and the learning patterns formed after that;
- The cultural background, but more over modern learning traditions of different nations should be looked more closely

To conclude, online learning can be very effective, if the student wants it to be. Attending online course needs a lot of self discipline and independency. The student has to have an inner motivation to learn from the course, where the teacher is not "holding the hand" all the time. The structure of online courses is more suitable to elderly students. Online courses can be considered as one way of learning, but the facilitator has to keep in mind the stronger need for motivating the students, as without constant surveillance, the students tend to relax more.

References

Alter, A. (2007, August 10). Is This Man Cheating on His Wife? *The Wall Street Journal.* Retrieved from http://online.wsj.com

Baszanger, I., & Dodier, N. (2004). Ethnography: Relating the part to the whole. In D. Silverman (Ed.), *Qualitative Research. Theory, method and practice* (pp. 9–23). London: Sage Publication.

Brew, A., & Boud, D. (1995). Teaching and research: Establishing the vital link with learning. *Higher Education*, 29, 261–273.

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). How and why do teacher credentials matter for student achievement? Retrieved from http://www.nber.org/papers/w12828.pdf

CoCreat. (2011). Retrieved from http://let.oulu.fi/cocreat/

Collins, A., Seely, J., & Holum, A. (1991). Cognitive Apprenticeship: Making thinking visible. *American Educator, 15*(3), 6–11, 38–46.

Conole, G., (2008, July). New Schemas for Mapping Pedagogies and Technologies. *Ariadne*, 56. Retrieved from http://www.ariadne.ac.uk

Conole, G., & Dyke, M. (2004). What are the affordances of information and communication technologies? *Research in Learning Technology, 12*(2), 113–124. DOI: 10.1080/0968776042000216183

Conole, G., Laat, M., Dillon, T. and Darby, J. (2008). Disruptive technologies, pedagogical innovation: What's new? Findings from an in-depth study of students' use and perception of technology. *Computers and Education*, 50, 511–524. DOI:10.1016/j.compedu.2007.09.009

Fominykh, M., & Prasolova-Førland, E. (2011). Virtual Research Arena: Presenting Research in 3D Virtual Environments. In S.-M. Barton, J. Hedberg & K. Suzuki (Eds.), *Proceedings of Global Learn Asia Pacific 2011* (pp. 1558–1567). Melbourne, Australia: AACE.

Fominykh, M., Prasolova- Førland, E. and Divitini, M. (2011) "Constructing a 3D Collaborative Virtual Environment for Creativity Support" In *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2011* (pp. 1919–1928). Chesapeake, VA: AACE.

Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st century – a framework for research and practice*. London: Routledge/Falmer.

Ghefaili, A. (2003). Cognitive Apprenticeship, Technology and the Contextualization of Learning Environments. *Journal of Educational Computing, Design & Online learning*, 4, 1–27.

Herrington, J., & Oliver, R. (1995). Critical characteristics of Situated Learning: Implications for the Instructional Design of Multimedia. In J. Pearce & A. Ellis (Eds.), *Learning with technology* (pp. 235–262). Parkville, Vic: University of Melbourne.

Jensen, J. F. (1998). Interactivity – Tracking a New Concept in Media and Communication Studies. *Nordicom Review, 19*(1), 185–202.

Kaplan, A. M., & Haenlein, M. (2009). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons, 53*(1), 59–68.

Kennedy, G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S., ... Churchward, A. (2007). The net generation are not big users of Web 2.0 technologies: Preliminary findings. In R. J. Atkinson, C. McBeath, S. K. A. Soong,. & C. Cheers (Eds.), *ICT: Providing choices for learners and learning. Proceedings ascilite Singapore 2007.* (pp. 512–525). Retrieved from http://www.ascilite.org.au/conferences/singapore07/procs/kennedy.pdf

Krathwohl, D. R. (1993). Nonprobability Sampling. In P. Clinton. N. Silverman, V. L. Blanford & H. Gatenby (Eds.), Methods of Educational and Social Science Reasearch: An Integrated Approach (pp. 136–137). Ney York, N.Y. USA: Longman.

Lenhart, A., Purcell, K., Smith, A. & Zickuhr, K. (2010). Social Media & Mobile Internet Use Among Teens and Young Adults. Retrieved from http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx

O'Reilly, T. (2005). What is WEB 2.0 - Design Patterns and Business Models for the Next Generation of Software. Retrieved from http://oreilly.com/web2/archive/what-is-web-20.html

Paavola, S. & Hakkarainen, K. (2005). The Knowledge Creation Metaphor – An Emergent Epistemological Approach to Learning. *Science & Education, 14*(6), 535–557.

Palomäki, E., Qvist, P., Natri, O., Joensuu, P., Närhi, M., Kähkönen, E., ... Nordström, K. (2011). LabLife3D: Teaching Biotechnology and Chemistry to Engineering Students by Using Second Life. In H. Ruokamo, M. Eriksson, L. Pekkala & H. Vuojärvi (Eds.), *Proceedings of the 4th International Network-Based Education 2011 Conference The Social Media in the Middle of Nowhere* (pp. 124–131). Rovaniemi: University of Lapland.

Phelps, R. (2003). Developing Online From Simplicity toward Complexity: Going with the flow of Non-Linear Learning. In *NAWeb2003:The Web-based Learning Conference* (pp. 73–83). Frederickton, NB, Canada.

Rettie, R. (2002). Net Generation Culture. *Journal of Electronic Commerce Research, 3*(4), 254–264.

Selwyn, N. (2010). Degrees of Digital Division: Reconsidering Digital Inequalities and Contemporary Higher Education. *Revista de Universidad y Sociedad del Conocimiento, 7*(1), 33–42.

Zapalska, A. & Brozik, D. (2006). Learning styles and online education. *Campus-Wide Information Systems, 23*(5) 325-335. DOI: 10.1108/10650740610714080

Zhang, D., Zhao, J. L., Zhou, L. & Nunamaker Jr., J. F. (2004). Can e-learning replace classroom learning? *Communications of the ACM, 47*(5), 75–79.

Toming, K. (2011). Communities of Practice in higher education. In H. Ruokamo, M. Eriksson, L. Pekkala & H. Vuojärvi (Eds.), *Proceedings of the 4th International Network-Based Education 2011 Conference The Social Media in the Middle of Nowhere* (pp. 175–177). Rovaniemi: University of Lapland.

Wever de, B., Mechant, P., Veevaete, P. & Hauttekeete, L. (2007). E-learning 2.0: social software for educational use. In P. Kellenberger (Ed.), *Proceedings of the Ninth IEEE International Symposium on Multimedia Workshops Honolulu, Hawaii, December 10–12* (pp. 511–516). Los Alamitos: IEEE Computer Society.

KOKKUVÕTE

Käesolev magistritöö käsitleb e-õpet kõrghariduse kontekstis keskendudes eelkõige üliõpilaste seisukohale. Uuritav probleem seisneb üliõpilaste suhtumises avatusse, jagamisse ja privaatsuse küsimustesse sotsiaalse meedia vahendeid kasutatavate veebipõhiste kursuste kontekstis. Lisaks üliõpilaste hoiakutele käsitletakse veebipõhiste kursuste läbiviimist ka õpetaja seisukohalt. Peamised küsimused, millele vastust püütakse leida, on järgmised:

- Millised on peamised punktid, millele peab keskenduma, kui viia läbi rahvusvahelist veebipõhist kursust;
- Millised on väljakutsed sellise kursuse läbivimisel avatuse, jagamise ja privaatsuse seisukohalt lähtudes;
- Millised tegurid mõjutavad õpilase osalemist või mitteosalemist veebipõhisel kursusel

Küsimustele vastuste leidmisel kasutati teoreetiliste andmete kirjeldamist artiklite näol, tutvustati nii personaalse kogemuse kui rahvusvahelise küsitluse tulemusi ning käsitleti lähemalt juhtumiuuringut rahvusvahelise veebipõhise kursuse läbiviimisel.

Andmete analüüsi tulemusena kogunesid soovitused veebipõhise kursuse läbiviimiseks, milleks olid:

- kursuse alguses tuleks teha üleüldine taustaküsitlus õpilaste eelnevate oskuste kohta;
- rahvusvahelise kursuse puhul tuleks grupid moodustada vastavalt õpilaste pädevuste, mitte rahvusele;
- kursuste puhul, mis eeldavad gruppide moodustumist, peaks nende suurus jääma 4-5 inimese juurde;
- igale grupi liikmetele tuleks anda kindel valdkonna, mille eduka sooritamise eest grupisiseselt ta vastutav on;
- õpilastele tuleks rõhutada, et veebipõhine kursus eeldab rohkem iseseisvat õppimist ning õpilasel peab olema sisemine motivatsioon osalemiseks;
- Õpetaja peaks pidevalt meelde tuletama õpilastele kursusel aktiivse osalemise vajadust.

Appendixes

Appendix 1 - The complete names of the example courses and the tools used

ITFNM – Introduction and Theoretical Foundations of New Media
MP – Media Project
NIE – New Interactive Environment
ELinNM – Ethics and Law in New Media

Course	Course/personal blog	Wikiversity /Dropbox	Skype/ FlashMeeting/ forum	Face-to-Face meeting	EduFeedr/ Elgg
ITFNM	X	X		X	
MP			X	X	X
NIE	X	X	X		X
ELinNM	X	X	X		

Appendix 2 – "TEL-course" program

Course Program

IFI7125	**Designing technolog-enhanced learning** ***Study semester***: **F**all/ **S**pring 2012 ***Exam***
Study load – 6 ECTS	***Load of contact hours***: Synchronous virtual lectures 15 hours, individual collaborative studying in virtual learning environment 145 hours.
Objectives:	Students become familiar with the key concepts, competing theories and approa of designing Technology-Enhanced Learning (TEL). In collaboration international students they will develop practical skills of setting up, implemen and evaluating the use of distributed set of integrated TEL systems and tools, and will design a prototype of an advanced TEL course. This course will be impleme in international collaboration.
Course Outline	• Technology-Enhanced Learning (TEL) concept • Designing TEL: design process, selection of technology, constructing environment • Implementing TEL • Evaluating TEL
Learning Outcomes:	Having successfully completed the course, students will be... • Capable to describe characteristics of TEL; • Capable to define main stages of designing TEL; • Proficient to design and implement pedagogically well-grounded course; and • Competent to assess pedagogical use of Information and Communica Technology (ICT).
Assessment Methods:	Exam. Grading will be based on the active participation from the lectures and on individual and collaborative studying in virtual learning environment. Assessn quotation is distributed as follows: 20% for active participation (self-reflection tasks and peer evaluation discussions) 30% project pedagogical design; 20% project technical design; and 30 % project implementation achievements
Teacher(s):	Sónia Sousa ; Kersti Toming
Subject name in Estonian	Tehnoloogiaga toetatud õppimise disainimine
Prerequisite subject(s):	None specific.
Compulsory Literature	Study material will be published in the beginning of the course.
Replacement Literature	Aditional literature on: 1. Project-based learning (e.g. Jones, Rasmussen, & Moffitt, 1997; Scardamalia & Bereiter, 1991) 2. Collaborative learning (e.g. Dillenbourg, 1999; Järvelä & al. 2010) 3. Playful learning
Participation and Exam requirements	Max number of participants (depending on the workspaces in lab etc). Conditions for taking re-assessment: 1. Students are required to participate in 10 out of the 15 contact hours. 2. Students are required to actively participate in the sub-group project by contributing to its design, implementation and presentation, in order to be assessed.

Independent work	Students will be expected to work independently and collaboratively in the virtual learning environment. The amount of expected independent work is equivalent to 145 hours. Technology used in the course include: 1. Flashmeeting, Adobe ConnectPro or Skype 2. Moodle, SecondLife, Sloodle 3. Blogs: Wordpress etc.
Grading criteria scale or minimal level necessary passing the subject	Grading criteria: **Self-reflection reports and Peer-evaluation discussions** A - excellent: soundly situated in its context and its rational reflects a comprehensive understanding and discussion of relevant issues. B - very good: above average: soundly situated in its context but the depth and soundness of its rational reflects a moderate understanding and discussion of relevant issues. C - good: situated in its context and the depth and soundness of its rational reflects a moderate discussion of all relevant issues. D - satisfactory: situated in its context but the depth and soundness of its rational reflects a superficial understanding and discussion of relevant issues. E - sufficient: loosely situated in its context and the depth and soundness of its rational reflects a superficial understanding and discussion of relevant issues F- less than 50% of the work is done - fail: more work is required before the credit can be awarded. **Project pedagogical script assessment** A - excellent: Presents an above average fully sounded and efficient decisions concerning the pedagogical aspects of design a TEL course. B - very good: Presents fully sounded and efficient decisions concerning the pedagogical aspects of design a TEL course. C - good: Presents efficient decisions concerning the pedagogical aspects of design a TEL course. D – satisfactory: Presents partially sounded and comprehensive decisions concerning the pedagogical aspects of design a TEL course. E - sufficient: Presents loosely situated decisions concerning the pedagogical aspects of design a TEL course. F- less than 50% of the work is done - fail: more work is required before the credit can be awarded. **Project technical design assessment** A - excellent: Presents an above average fully sounded and efficient decisions concerning the technical aspects of design a TEL course. B - very good: Presents fully sounded and efficient decisions concerning the technical aspects of design a TEL course. C - good: Presents efficient decisions concerning the technical aspects of design a TEL course. D – satisfactory: Presents partially sounded and comprehensive decisions concerning the technical aspects of design a TEL course. E - sufficient: Presents loosely situated decisions concerning the technical aspects of design a TEL course. F- less than 50% of the work is done - fail: more work is required before the credit can be awarded. **Project implementation assessment** A - excellent: fully implemented the project. Showing above average comprehensive and confident skills conducive to the implementation of efficient designing of Technology-Enhanced Learning (TEL) course. B - very good: fully implemented the project with a comprehensive and confident skills conducive to the implementation of efficient designing of Technology-Enhanced Learning (TEL) course. C - good: Generically implemented the project. Showing comprehensive

	confident skills conducive to the implementation of efficient designing of Technology-Enhanced Learning (TEL) course. D – satisfactory: Partially implemented the project. Showing generic comprehensive and confident skills conducive to implement efficient designing of Technology-Enhanced Learning (TEL) course. E - sufficient: Partially implemented the project. Showing moderate skills in implementing efficient designing of Technology-Enhanced Learning (TEL) course F- less than 50% of the work is done - fail: more work is required before the credit can be awarded.
Information about the cour	**Week 1**: Orientation week (workshop & independent work) Previous mentioned technological applications (except Moodle,SedondLife and Sloodle) should be taught to students before the course will start. **Weeks 2-3**: Starting up the course/getting to know each others (independent work). Getting familiar with the course environments Moodle, SecondLife and Sloodle. Formulating sub-groups. Start-up videoconference – 'Get to know each other' – discussion in Moodle. **Week 4**: Sub-group discussion (independent work) Discussion about working methods and decision of platform which is used for group work. Producing a technological scripts. **Weeks 5-6**: Pedagogical script of the course (independent work) Produce a pedagogical script for their virtual course. Presenting the pedagogical script in the SL-room. **Weeks 7**: Evaluation of pedagogical decisions (independent work) Post questions regarding the pedagogical script presented. Comment other's pedagogical script and pedagogical decisions. **Week 8-9**: Technical script of the course (independent work) Produce technical script of the virtual course. **Weeks 10-11**: Building up a course platform (independent work) Build up the virtual environment based on the pedagogical and technological scripts. **Week 12**: Peer-evaluation (independent work) Peer evaluation of the virtual cours **Week 13**: Finalizing the web course (independent work) Finalizing the courses based on the peer feedback. **Week 14**: Summing up the course (independent work) Conclusion of the course – seminar in SL-room.